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DEVELOPMENT DIGEST

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ENTREPRENEURS

TEXTILE MANUFACTURERS BUYING AT WOOL AUCTION
IN JAIPUR, INDIA.
[PHOTO: FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS, T. SENNETT.]

Social Barriers to African Entrepreneurship

Peter Marris

[The chief barriers to entrepreneurial progress by Africans in Kenya is their social isolation from the Europeans and Asians who largely control the expanding financial, commercial and industrial activities. Proposals for bridging this gap, with benefits for both sides, are based on an extensive survey of Kenya's businessmen.]

I investigated about 50 small industrial enterprises which had received loans from the Kenya government's Industrial and Commercial Development Corporation (ICDC); these must account for most of the wholly African-owned industrial business in Kenya of any size. Most of them are sawmills, bakeries, garages, dry-cleaners, tinsmiths or furniture makers. With a colleague, we interviewed half of the commercial businesses which had also been given loans by the ICDC—another 50 enterprises, mostly wholesalers and retailers in rural markets. Finally, using teams of students, we interviewed all the African businesses in ten market centers in different parts of the country. Most are small retail stores around a market place, selling the same scanty stock of cigarettes, cloth and general groceries. There may be several bicycle repairers and blacksmiths, hotels and bars, a barber, a photographer, a hides dealer, a flour mill, a furniture maker or watch repairer, and two petrol pumps in front of the most prosperous store. Some of the shops are open sporadically when the owner has no work on his farm. We also interviewed a sample of Asian businessmen in and around Nairobi, because—at least to African eyes—Asian competition is the

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most serious obstacle to African progress. These surveys covered the organization and progress of the enterprises investigated: their sources of capital and labor, their methods of pricing and accounting, their suppliers and handling of credit to customers, difficulties they had encountered and their plans for the future—and personal information on the owners.

The ICDC, and Kenyan policy generally, have two aims. The first is to bring Africans into an industrial and commercial economy dominated by Europeans and Asians. Four years after independence, there is still hardly an African shop to be found in the main streets of Nairobi, or an African workshop in its industrial estate. The second is to stimulate African entrepreneurship, so that industrial and commercial growth is no longer dependent on immigrant communities and overseas initiative. Africanization is, I think, the less difficult problem: it depends on training Africans to replace foreigners in activities and organizations already established. But the encouragement of entrepreneurship requires more initiative and originality.

Evolution of Entrepreneurship

To explain why entrepreneurship flourishes in some societies while it stultifies in others, most arguments have turned either to aspects of the culture of society or to certain specific resources. The kinds of explanation which derive entrepreneurship from the culture of society are not perhaps very practically helpful, since they point to influences which policy can hardly reach. It is less frustrating to assume that there will always be some who can override the inhibitions of their culture, and look for the resources which would enable them to try their chance. These resources are capital and knowledge—money to start, and knowledge to use it, whether of techniques or production, or business management. The African businessmen we interviewed mentioned loans and training, again and again, as the help they most needed: and these are, in fact, the resources which the government is trying to provide, through loan schemes, a management training center, and extension workers. Yet all over the world these obviously relevant policies have ended in disappointment. So the identification of scarce resources may, after all, be no more adequate an explanation than the identification of missing values.

Looking through our interviews with African businessmen in Kenya, it seems to me that while all these ideas are relevant, they do not reach the heart of the matter. Certainly, African businessmen are short of capital; yet those who succeed find money somewhere. They are poorly educated, or not educated at all; yet I can find no correspondence between education and success. Some of the ablest and most systematic have never been to school. Their bookkeeping is often haphazard, their costing speculative; yet there are successful

businesses whose only accounts are random notes jumbled into a drawer along with pencil stubs, old letters and a trade calendar; and others whose neatly ruled ledgers and certifieid accounts merely document the coming collapse. It is true, too, that the obligations of kinship may beset businessmen with demands for jobs, unlimited credit, and school fees for a crowd of younger brothers, cousins, nephews and nieces. But the successful have discovered how to be firm, to insist that business is something apart, governed by its own rules of economic rationality. And in all they say, their values reflect the Protestant ethic—thrift, hard work, integrity, individual initiative. They plough back their profits with a passion for accumulation, live modestly, and worry. Yet I do not think the goad of these virtues drove them to be entrepreneurs, but rather that—once committed to their businesses, and discovering the satisfaction of creating something of their own—they have come to recognize the sacrifices they must make for it. Thus, values, patterns of social relationships, capital, skills all seem relevant, but none, in themselves, seem to influence in any consistent and necessary manner the actual evolution of entrepreneurs.

What is the distinctive quality—not of successful entrepreneurs but of entrepreneurship itself? It is not the ability to run a business, invent techniques, or persuade customers to buy. It is, I think, more a kind of original and very practical perceptiveness—an ability to assemble or reassemble from what is available to one a new kind of activity, to reinterpret the meaning of things and fit them together in new ways. It is also a very concrete kind of imagination, alert to the specific opportunities of a particular place at a particular time, improvising for what lies to hand. In the African countryside, an innovation may not seem, at the outset, very remarkable—a wholesale business, a restaurant at a crossroad, a bus service, a sawmill. But to achieve it, the owner must have seen what others had missed—an unsatisfied demand, a way of raising money, a source of skilled labor—and put them together. The business is the missing piece which locks unrelated circumstances in a new pattern of economic activity. To realize this pattern, some of the pieces may have to be pried apart from other patterns of relationship.

Looked at in this way, it becomes obvious why the businesses we interviewed should be so bewilderingly different in their origins, and their founders such a variety of men. Each arises out of the fortuitous circumstances of a man's life—a quarrel with his employers, a stroke of luck, a sickness which disrupted a career. Among the Kikuyu, the long years in detention camps during the Emergency turned many into businessmen. They had lost their old jobs, even their farms; they made new friends among their fellow prisoners, and exchanged experiences; they taught each other, organizing classes, spending what little money they had on exercise books and

correspondence courses; and they had time to think how they were to pick up the threads of their lives when at last they were free again. Perhaps entrepreneurship came more easily to them, because the previous pattern of their lives had been so brutally disrupted. But whatever their circumstances, they have in common the ability to construct an original synthesis from them, and perhaps very little else.

I do not mean to suggest that entrepreneurship is unrelated to the culture or history of a people. I doubt whether this kind of imagination is often stimulated unless there is a pressing need, some resources to work with, and a society open enough to tolerate innovation. Most of the businesses supported by the Kenya Industrial Development Corporation are Kikuyu, and the Kikuyu are the most vigorous innovators in East Africa. They occupy some of the most fertile land, and suffer from the severest pressure of population. They have, then, both an urgent need to find new opportunities, and resources to develop them. Partly from a generation of laboring in European farms, partly perhaps from an older tradition of adaptability and individualism, they are open to change. But while all these factors facilitate entrepreneurship they are part of history, and beyond the reach of human manipulation. Among another people where circumstances may be very different, it is only necessary that there should be enough frustration with the chances of life to urge some towards innovation, and an environment that is not so bleak that it crushes all initiative, and wears out hope.

The Obstacles

Given this conception of entrepreneurship as a practical skill in assembling resources, what are its greatest obstacles in a country like Kenya? Because it is so practical, so much a matter of individual circumstances, it depends very much on the personal knowledge and relationships of the entrepreneur. He can only manipulate the part of his environment he understands and has connections with. And this, I think, is a great constraint in African society where impersonal, institutionalized ways of gaining knowledge, recruiting skills, and borrowing money are not highly developed. In seeking partners or workers, in choosing an activity, finding a market, an African businessman cannot easily reach beyond his own personal experience. This would not matter, except to the scale of his business, if the economy in which he operated were similarly bounded. But it is not. And this I think may be the most fundamental difficulty which African businessmen face. They have to succeed in an economy where they borrow their money in the branches of European banks, and compete with products manufactured a hundred or a thousand miles away. But they are socially isolated from the wider economy by a profound mutual ignorance.

In Britain, by contrast, a businessman speaks the same language as his bank manager and his suppliers, and though he may not know them personally they share a common culture and a common knowledge of their society. There are clubs and informal social networks which facilitate and reinforce business relationships. An African businessman shares few of these advantages. His bank manager is probably European, his suppliers Asian. They move in different social worlds, and even if they are willing to trust each other they lack the familiar cues to judge each other's worth. An African businessman generally lacks the impersonal credentials that might establish his credit-worthiness: securities, or reliable guarantors. For him, the whole network of commercial institutions is abortive, because it is not backed by a corresponding social network through which to establish mutual confidence and understanding.

Even more serious, especially for some of the industrial enterprises, is the African businessman's unfamiliarity with his market. So long as his business serves a local market, and is protected against outside competition, he operates within a familiar society. Service industries like dry-cleaners or garages, or furniture makers who work to order, are relatively protected. These are, we found, the kinds of businesses in which African entrepreneurs are most likely to succeed. But a baker or a sawmiller has to face competition from established firms which can profitably expand to cover much of the country. He cannot easily begin on a small scale in the market he knows and can reach, since it is part of a much larger market which powerful competitors are ready to exploit. Yet he cannot start himself on a larger scale, because he has no access to capital, no commercial experience and no contacts.

The Intermediary Role of Government

This social isolation from the economy of which he is part has been perpetuated by the only established means to overcome it. Government has become the recognized intermediary through which the African businessman or farmer relates to the world outside. Government agencies buy his coffee, tea or pyrethrum and sell it abroad. Government borrows money from Britain or West Germany, and relends it to African businessmen. It negotiates partnerships with overseas firms, and passes on a few of its shares to African subscribers. African businessmen look to the government for help to organize their supplies, provide their capital, find their markets, so that African enterprise is relegated to a special category dependent on government support.

Few Africans in Kenya have therefore ever acquired much experience of a large market. As farmers, they have sold their export crops at fixed prices to a monopoly marketing board, and have never

themselves faced the problem of distributing their produce. They tend, I think, to approach business in the same way—as a matter of having something to sell, not of selling it. The whole conception of competitive marketing lies outside their experience. As craftsmen set up their own workshops, and begin to expand into industrial concerns, they suffer because their ingenuity as craftsmen is not matched by any corresponding imagination in selling what they make.

The dependence of African businesses on government loans is also beginning to inhibit their development. The need for these loans arises because the investment is too uncertain, or the profits too small, to attract commercial capital. The borrower cannot offer much security, his credit-worthiness is hard to assess, and the viability of his enterprise speculative. So government steps in, to supply capital where commercial safeguards against risk cannot easily by applied. And it is looking for a different kind of reward: even if it loses money, it has achieved its essential purpose if it succeeds in promoting worthwhile growth. But these loan schemes usually suffer from a high rate of default, especially at first, when applicants are too casually chosen, or the wrong kind of business supported. In reaction, the schemes become stricter, tending to insist on the same safeguards as a commercial lender, and imposing more rigid controls on the use of their funds. The ICDC, for instance, generally now refuses industrial loans for working capital—whose use is difficult to supervise—but will lend money for machinery of its own choosing. The result is that, for some businesses—especially wholesalers and retailers—the ICDC is performing a service which could be as well done by banks. And for others, its restrictions leave the businesses with so little flexibility that they have no room to retrieve the inevitable mistakes. They may be left with the wrong kind of equipment—overpersuaded by the Corporation—or find themselves with equipment but no working capital to use it. So the loan scheme runs the risk of becoming either redundant or of setting conditions which potentially viable enterprises cannot meet. When things go wrong, the borrower looks to the lending agency to tell him what to do next; but it expects him to assume responsibility. Between the two, the situation may deteriorate irrevocably.

So while there is a stage in the development of the African economy when government has to act as an intermediary, as time goes by this sets a pattern which may inhibit the evolution of a truly integrated network of economic relationships, isolating African businessmen from the experience and contacts they need to acquire, cramping their initiative, and relieving commercial institutions of tasks they should increasingly be taking over. The government, as his intermediary to the wider world, can actually become a barrier to his exploration of it.

Kenya's history of deliberate political and economic segreation has aggravated this social discontinuity. But it is present, I think,

everywhere in Africa. The self-enclosed, parochial community of Asian business has its counterpart elsewhere—Syrian or Greek, Italian or Arab. Everywhere the outposts of great international concerns dominate import and export, manufacture and banking. And so, throughout the continent, economic interdependence has no social or cultural counterpart. The entrepreneurial imagination is balked by unfamiliarity.

Bridging the Gap

I doubt whether these barriers can be overcome simply by recruiting African staff to the management of branches of overseas concerns. They become, I suspect, absorbed into a European system of operation which they lack the confidence and familiarity to change. They may even be less able than their European predecessors to establish contact with African businessmen who lack their education and social standing. The problem is not so much to train Africans in the methods of European business as to make European and African businessmen familiar with each other and each other's societies, and establish personal relationships. The few Europeans whom the African businessmen we interviewed came to know well seem to have helped them greatly—introducing them to markets, advising on equipment, opening lines of communication overseas, or to European businesses in Nairobi. This kind of personal contact cannot be institutionalized in training schemes, nor mediated by official exchanges.

If only such relationships can be established, African businessmen will eagerly make use of them, seeking agencies for imports or exports, learning to reach and satisfy new markets, supplying components to large-scale concerns. The Kamba wood carving industry, for instance, whose exports are now worth £300,000 a year, developed largely because an enterprising European district officer found export outlets for it: and this industry itself, however tenuously, now begins to provide channels of communication overseas for other Kamba businessmen. Where the European manager of a motor car agency has encouraged one of his mechanics to set up his own business, the friendship between them relates the African to the world of European businesses in Nairobi, and opens to him contacts and custom that he could never otherwise reach. The first need, then, is to find and develop points of contact, so that the opportunities of a wide ranging economic interdependence can be realized through a corresponding network of social familiarity.

How this might be achieved depends partly on broadening the range of personal relationships—enabling African businessmen to travel more widely, and gain direct practical experience of the way European business works; encouraging European businessmen to find out what lies beyond the offices and hotels of capital cities, and meet the men

who, on however small a scale, are pioneering economic innovation in markets and villages. It depends, too, on imaginative planning, to exploit the opportunities created by economic relationships. If, for instance, an oil company promotes a chain of petrol stations up and down Kenya, it ought to be concerned not only with selling petrol, but with the opportunity created by the village pump to develop other services. It could provide both advice and training to its agents, and discuss with them where and how they might expand. It could initiate studies of the retail and service needs of rural communities and guide its agents in how to take advantage of them. But the impetus of investment by large overseas companies in Kenya will not spread by any natural law, so long as ignorance and isolation frustrate the communication of demands and skills. The social counterpart must be as consciously planned as the economic investment itself. In the long run, the more imaginatively and persistently private investors from overseas involve themselves in creating new social relationships and institutions to spread the opportunities of development, the more secure their own position will be.

From the standpoint of African businessmen—especially in industries—their most urgent need is help in marketing, for ignorance of the market is the immediate practical handicap of their isolation. A marketing service, designed to put manufacturers and distributors in touch with each other, to communicate unmet demands to enterprises that might supply them, and seek outlets both at home and overseas, could be especially valuable. Its job would be to make introductions and advise on difficulties, falling into the background as new commercial relationships were established. It would cost no more than the salaries of a small staff, an office, travel and publicity. I believe its benefit to African businessmen might be proportionately much greater than any other form of aid.

Essentially, we need more facilitators, whose task is to make the market more perfect by communicating opportunities between socially isolated but economically interdependent groups, both within Kenya and overseas. Some of these will be representatives of large companies, working to extend the opportunities created by their investment into the rural economy; some will be representatives of associations of African businessmen; some will be government agents, channeling the needs of government departments and local authorities towards African businesses which can supply them; some will be bankers, extending their range of confidence. One organization should be created with all this as its special function.

The work of the ICDC, the Management Training Center, Provincial Trade Officers and Joint Loan Boards needs to be reinforced by a more direct attack on the social barriers to entrepreneurship. I believe it might repay the Kenya government to take the following steps:

1. Set up a marketing intelligence service.

2. Discuss frequently with large companies ways in which their investment can generate the widest stimulus to growth, and plan with them how to establish the relationships to facilitate it. Raise these issues with new investors, encourage experiments and their evaluation, and recommend successful experiments to others. The more insistently government presses its interest, the more seriously companies are likely to respond: the best of them will certainly be sympathetic.

3. Hold similar discussions with commercial lenders, so that they progressively relieve government of the burden of financing African entrepreneurship.

4. Channel more of the government's own needs for goods and services towards African businesses. An impartial system of tendering guards against corruption, but it would not be unfair, at the outset, to give African businesses some preference, so long as they can meet their competitor's estimates. And there must be all kinds of special needs—important orders for a small business, but not major government expenditure—which could be notified, through the marketing service suggested, to potential African suppliers.

5. Provide travel grants for African businessmen to gain specific, practical experience abroad.

[Excerpted from "The Social Barriers to African Entrepreneurship," The Journal of Development Studies. London: Frank Cass & Co. Ltd., Vol. 5, No. 1, October 1968, pp. 29-38.]

Economic Personalism and Philippine Entrepreneurship

James N. Anderson

[The problem for Philippine entrepreneurship is less how to create an entrepreneurial spirit which is absent than how to create economic conditions which can release existing talents to provide development leadership. A large pool of Filipinos exists at all levels of society who show a special fondness and adeptness for trading, willingly take risks, frequently demonstrate innovative talents, and who have proved they can generate expanding productive enterprises.]

Character of the Philippine Economy

The economy includes a large peasant agricultural sector and a small, highly capitalized, agro-industrial sector. The former is characterized by small holdings, subsistence cultivation, high tenancy, low productivity, low money earnings, and multiple occupations. Emphasis in the agro-industrial sector is on agricultural export, with strong dependence on the United States market (48 percent in 1968). Urban industry, which is growing at a slow pace, consists mainly of assembly and processing plants and light manufacturing.

U.S. colonial trade policy was based on trade preferences which focused on the production of a limited range of export products—sugar, copra, abaca, and tobacco—and on the import of American manufactured goods. As the Philippine economy became progressively more dependent upon the U.S. economy for both export outlets and imports, the effects were to discourage diversification, increase primary production

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of a limited range of agricultural exports, and discourage the production of any non-protected or competitive goods. Such a climate reinforced conservative values, placing a premium on land ownership, mortgage holding and money lending, and discouraging entry into risk-taking enterprises and manufacturing.

Furthermore, few economic opportunities existed for most Filipinos in the colonial economy. Most economic functions outside of primary agricultural production were monopolized by Western and Chinese aliens. It was not until the Commonwealth period (1935 on) that Filipinos began to engage significantly in manufacturing and commercial activities, as public funds were employed to create large government corporations; in commerce, government policies supported Filipinization through restrictive legislation and government-owned credit institutions. However, little restructuring of the economy attended these efforts before the war struck in 1941.

The wartime experience greatly influenced the economy and economic behavior. Some Filipinos turned their energy and skills to economic collaboration with the Japanese. Others gained new confidence and experience in independent operations through guerilla activities and through the improvisation necessary for sheer survival. With the almost complete breakdown of internal order and the deterioration of much of the formal social structure, a reinforcement of already highly individualistic values took place as morality devolved to that within the family and as subversion of political and economic order became a lauded enterprise. It is understandable, in view of the depredations suffered by the Filipinos during World War II, that sizable portions of post-liberation war-damage funds strayed from strictly developmental uses into consumer goods and into speculations and short-run commercial activities. Amoral and asocial individualism, spawned during the war, was reinforced on every side by the events of immediate postwar reconstruction.

Philippine economic policy since independence has emphasized the development of manufacturing principally by import substitution. Essential new industries were granted tax exemptions, received preferred treatment in foreign exchange allocations for capital goods and raw materials, and were protected by excise taxes and tariffs. These policies resulted in high profit rates in manufacturing and favored already established firms. The dualistic character of Philippine trade and business, with its long and well established history, was not easily altered. For the Filipino peasantry there are local markets. In wholesale and retail trade the Chinese remain significant, though recent restrictive legislation has made inroads on this former monopoly. International business operations are controlled either by foreigners or by a small Filipino elite, as are import and export firms, banks, and insurance, shipping, and mining and processing

companies. A "nascent middle class" composed of Filipino and mestizo (of Filipino-Chinese ancestry) small businessmen, owners of limited properties, teachers, professionals, minor government officials, and many highly mobile "intellectuals" is perhaps not yet a class in the Western sense.

The prevalence of multiple occupations, even in the urban population, is another marked characteristic of the Philippine economy. Multiple occupations, which frequently include trading activities and small-scale enterprises, reflect the aspirations for expanded incomes among the elite as well as the lower class. A physician is also a hacendero (estate owner), politician, and owner of a bus company; a lawyer maintains a practice, teaches law, and operates several commercial fishponds; a bureaucrat holds offices in two government agencies and owns property and a rice mill; a high school principal operates a small transportation company and acts as a tobacoo buyer seasonally.

There are grounds for supposing that occupational and other kinds of hedging have mainly negative consequences, in that they are symptoms of underdevelopment and stand in the way of increased efficiency. The economy is characterized by unemployment, underemployment, low family incomes, lack of dynamic capital, tight credit and high prices relative to earnings. Such an economic climate encourages the adoption of devices to spread risk. Small cultivators resist committing land entirely to cash monocrop farming or seeking maximal productivity, since a part cash and multicrop operation is immeasurably safer. In precisely the same way, non-farming Filipinos may explicitly resist holding a single occupation unless it clearly provides a bountiful income. Also, since the Philippine economy is critically short of cash and credit, such supplementary occupations frequently become principal regular sources of money required by chiefly subsistence-oriented peasants. The high proportion of women involved in buy-and-sell activities is, at least in part, a reflection of the need for small amounts of cash on hand. Need for money in an economy in which money is universally used but difficult to obtain is also reflected in the widespread presence of personal financial indebtedness and monopsonistic relationships. However, buy-and-sell operations and other apparently adjunct enterprises should not be written off simply as supplemental or emergency occupations. Taking a longer-term view, some of these develop into expanded ventures or provide valuable experience, and they reinforce confidence and a sense of achievement which may later help launch an entrepreneurial career.

The Filipino Entrepreneur

Social scientists concerned with Filipino entrepreneurs have focused their attention almost exclusively on manufacturing, and

many observers have tended to dismiss Filipino manufacturing entrepreneurship as imitative—a hothouse plant nurtured by recent government protective and concessionary policies. But there is another level of Filipino mercantile entrepreneurship which has been essentially ignored or misunderstood by investigators.

I contend that participation in buy-and-sell activities, though in some measure a symptom of the inadequacy of the economy, has provided a pool of potential entreprisers for the development of mercantile and industrial entrepreneurial activities given reasonable incentives and encouragement by economic conditions. The entrepreneurial career is usually a gradual and difficult process of advancement, setback, stabilization, and perhaps advancement once again. It may (usually does) involve more than one generation. Involvement in buy-and-sell activities appears frequently to be a first step. Filipino traders can, and not a few have, overcome the temptation to consume all profits, and the tendency to resist long-term capital investments. They can and have moved beyond personal undertakings to the organization of family firms, quasi-familial firms, and more formal corporate entrepreneurship, not only in commerce but also in manufacturing.

An enormous proportion of the Filipino population engage in part-time or full-time activities as traders. Even the casual visitor to Manila cannot have missed the lowest level operators, the multitude of hawkers, agents, street vendors, and service sellers: the boys selling cigarettes, magazines and chewing gum, or offering to watch or wash cars; the girls selling flowers; the vendors of duck eggs, ice cream, popsicles, fruit, candles, religious medals, sweepstakes tickets, and a thousand knickknacks. Less visible to visitors are a variety of sellers who bring their services or goods to offices throughout Manila during business hours. Present or former employees or friends of employees bring jewelry, hose, blouses, bags, children's dresses; during work breaks tailors show materials, take measurements and deliver orders; caterers and vendors of fiambreras (lunch boxes) sell luncheons and snacks. These operators usually depend upon a regular clientele with whom they maintain personal relations permitting sales on short-term credit. Millions of other Filipinos (and Chinese) are constantly alert for a situation in which they can convert their skill, time, labor, capital, or social resources into economic gains as middlemen.

These activities are not restricted to urban centers. The middlemen seek out and create every possible distribution niche in the economy. For example: Brigida owns a sewing machine and has access to loans from a close relative who receives remittances. She buys a bale of used clothing from the United States from a wholesaler in Manila, brings it back to the barrio, washes and alters the clothes,

and takes them to Baguio City to sell to her personal clientele of mountaineers. Hers and five other households in her small town neighborhood of 95 households derive their principal support in this way.

Commerciantes (merchants) in the Philippines are not restricted to any social class or to any single ethnic or regional group. Persons of the highest level of Filipino society enjoy busying themselves by buying and selling or by mediating sales between their mutual friends. It is an interesting social game; that it can be remunerative simply makes it the more interesting.

Mrs. B developed a small business into one of the most successful Filipino restaurants in Manila. It started with a meat stall she and her husband operated in the Quezon City market. Her husband is a Batangueno, and his beef supply comes from suki in Batangas and Mindoro. (Suki refers to a personalized relationship between a particular buyer and seller based on special privileges provided by the latter and loyalty on the part of the former.) He regularly supplies a hospital, a boarding school, and several restaurants in addition to retailing in the market. As a sideline, Mrs. B used to cook any unsold meat according to her favorite recipes and sell it. Her cooking became very popular and she began being asked to cater parties held by elite families and even to cater for special affairs at restaurants. This side of the business expanded rapidly and became very lucrative. Mrs. B soon turned the actual cooking over to others, assuming a close supervisory role and working to expand the business even further. She became a clubwoman and offered a special price to her clubs for catering their affairs. What she did not gain in immediate profit this way she gained enormously in goodwill, recognition and connections. Her contacts kept the business thriving, and she appeared regularly in the society pages in the company of prestigious persons. When the operation could no longer accommodate the demand for her services, she was able to obtain a loan through one of her friends, a banker's wife, and in this way launched the restaurant. It now has two branches and is tremendously successful. Mrs. B has seven children, all of whom have made excellent (i.e., wealthy) and sometimes strategic marriages (in terms of the business). On her part, Mrs. B has been appointed by the President as a member of the Board for Tourism, which cannot but bode well for future business.

Great numbers of Filipinos along the whole range of socio-economic levels thus have gained valuable experience in petty commercial activities. A few lower-class petty traders and many more from the increasingly hard pressed, lower traditional elite achieve sufficient success in such enterprises to undertake a full-time commitment to trade or business, which then becomes the central

orientation in achieving family status needs. A crucial shift in the development of the enterprise comes when the principal orientation for maintaining the enterprise changes from an overt concern for status needs to a greater concern for production of wealth. Some apparently status-oriented action may prove later to be highly rational enterprising behavior. Thus, this is a subtle and often unconscious change, which involves the family of the entrepreneur beyond the provision of day-to-day needs toward the more abstract goals of profit taking, reinvestment, and expansion. This break with traditional values is associated with the adoption of a somewhat longer-range and more mobile view than other Filipinos possess.

Economic Personalism

A strong preference exists for economic transactions to be infused with a personalized guarantee, as is the case with all stratetic relationships in Philippine society. Irregularity and unpredictability of factors of production and distribution create a climate for trade which rewards personalized means of regularizing and stabilizing the mixed and complexly structured economy of a developing country. An economic relationship may be made more secure, and regular networks for the flow of goods formed, by creating a solid social bond. (This is not unfamiliar in the highly rationalized U.S. economy.) Fundamental to economic interaction is the high value placed on trust—personal reciprocal expectations which underlie the security that Filipinos seek in most relationships. Furthermore, such reciprocal expectations are vital in a social system that has neither assimilated completely the concept of contract nor accepted the legal sanctions it is based on as effective guarantees.

In the distributive sector, the operations of most Filipino buyers and sellers and economic middlemen are strongly colored by social constraints and by the concern for establishing a basis for sanctioning mutual expectations. This accounts for the importance of one particular kind of relationship—the suki relationship noted above. Through suki relationships the stranger, through a gradual process, is made a friend, and sharp practices are replaced by concern for personal satisfaction and loyalty. Maintaining one's suki buyers and suppliers is the principal device for optimizing predictability and minimizing risks in Philippine exchange. The seller provides concessions, increased quantity, lower price, special quality, guarantee of a desired commodity even when temporarily in short supply, and special services including credit. The buyer reciprocates with loyalty and perhaps with referrals. As friendship increases, what was initially an economic transaction also becomes a social bond.

Suki is a progressive, not an instantaneously established, relationship. Therefore, a continuum exists from no basis for trust or

consideration to minimal trust, which may be created in first encounters, and finally to trust approaching that between Filipinos who are close allies. Bargaining is always permitted between suki. However, the element of embarrassment enters to reduce progressively the amount and kind of bargaining and make it more respectful as the frequency of reciprocally satisfying transactions and the quality of trust develop. Although trust is the ideal, absolute trust is seldom achieved, and one must be satisfied with relative grades of trust.

Frequently suki relations are established by referral through the process of intermediation. A suki buyer recommends a seller to his circle of kin, friends and neighbors. The suki (seller) is most grateful for this enlargement of his clientele and allows his suki (buyer) greater considerations. On the other hand, the new buyer is assured of fairness, for something less could affect the solidarity of even the original arrangement. And the seller, likewise, is more secure in extending credit and favored services to the new buyer because of the security he enjoys with the original suki, who can always be located and will probably help him collect any debts.

Personalism is also frequently employed within an evolving firm to create the networks of loyalties without which the firm could not function or continue to expand, as the following case shows. Tomas is a well-known young businessman in Manila. Nestor is the chief agent in the province of Cagayan of one of Tomas's enterprises, a logging concession. Nestor has a son who, at the time of this story, was a student in a Manila university. The boy had no close relatives in Manila and his parents were concerned about his safety and his ability to meet expenses. Too embarrassed to approach the boss directly, Nestor went to the home of Tomas's brother-in-law, whom he had previously served as a trusted employee and who had recommended him for his present job. Later, the brother-in-law approached Tomas, who said that he would be happy to help. He not only provided part-time employment for the boy in his Manila office but took him under his supervision, advising him to open a savings account, to score high grades, and to avoid association with companions who might lead him into trouble. Nestor had gone to Tomas's brother-in-law because he was "too ashamed" to approach Tomas directly on a matter involving his own benefit, even though he knew Tomas almost as well as he knew his brother-in-law. He felt that Tomas might consider such a direct approach shameless and opportunistic. He had gone to Tomas many times to seek his assistance for one of his own followers or employees, because he was "not asking for himself." On the other hand, Tomas revealed that his paternalism was not purely altruistic. The boy becomes, in effect, a "hostage" who guarantees Nestor's loyalty and honesty as an agent in a faraway province where he could easily manipulate the business so as to enrich himself.

In addition to personal preference, we have seen that shortage of credit encourages the personalization of exchange bonds. Credit can be offered only if collection can be guaranteed. Personal bonds offer such a guarantee; furthermore a suki offers credit at low interest (while other credit sources charge outrageous interest), and he offers convenient payment schedules. By contrast, the agent who sells on credit to one with whom he has no social relationship is inviting difficulty. The debtor who feels no obligation to his creditor often enjoys playing a game with him or even trying to beat him out of his debt altogether. The game is called paiyakan ("making the other one cry"). When the creditor comes on payday to collect, a battle of wits begins between him and the debtor as to who will give in first: the debtor by paying some part of the principal, or the creditor by allowing the debtor more time.

Between persons in an established relationship hiya (shame, embarrassment) enters as a factor for both parties in the collection of debts. For this reason older children are used in collecting debts, as are neutral go-betweens who can present the "need" of the creditor in a compelling way. It is important to recognize as well that though it may be embarrassing to ask for the repayment owed, it is not embarrassing to ask the debtor a favor. A debtor cannot refuse a "reasonable" request made by his creditor, and an unpaid debt need not be a "lost debt;" it may be converted into another desired service or good.

The imposition of import, price, and exchange controls in the 1950s have provided the incentive for some entrepreneurs to shift from commerce to manufacturing. Government controls also resulted in a shift in the forms of business interaction. Government assistance at the start of an enterprise, rare in the pre-1945 period, became common from 1945-49 and almost universal between 1950 and 1962; this new situation called for some shifts in techniques of intermediation in which, again, personalism played an important role. To quote John J. Carroll, S. J.:

> In a few cases it appears that a responsible businessman had a sound project in mind which would benefit the country and was not a get-rich-quick scheme and also had the personal confidence of a very high government official who pushed the papers through without any quid pro quo for himself. In other cases, entrepreneurs who did not have such high-level connections and were essentially "going the long way," found that it speeded things along and helped to prevent the "loss" of papers if they bought a few lunches for clerks and others who were processing their applications and "did small favors for them, the same as one would do for other businessmen" (my emphasis).... Still others were quite conscious of their desire to have "the right

> people" obligated to themselves, and did small favors precisely in order that they could at the proper time demand favors in return—establishing a type of creditor-debtor relationship with the recipient of favors which is taken very seriously in Philippine society. . . . Others brought influential politicians into their enterprises or cultivated their friendship in the expectation that they would supply the connections when necessary. . . . One spoke of politicians themselves taking the initiative and offering to supply the connections in return for a share in the enterprise. A few others, more fortunate or more foresighted, had prominent politicians in the family or themselves held high government positions at the time of entrepreneurship or shortly before.

Most of the practices described above are not strictly illegal, nor do Filipinos regard them as immoral. Activities viewed as immoral sometimes accompanied customarily accepted practices, however; intermediation for a price, and influence peddling and the "fix" had begun to rival personal intermediation in some quarters. Carroll believes, however, that entrepreneurial success during the 1950s was not built entirely on bribery and graft. While some of the most competent and energetic businessmen were also those who were the most prominent "political manipulators," he believes that they had the determination and energy to take advantage of economic opportunities in any set of conditions.

Entrepreneurial Development

On the basis of some half dozen studies of Filipino industrialists, using actual cases, the attributes related to such entrepreneurship may be pieced together. First, all available case material indicated a familiar course of organizational evolution from single proprietorship to family firm and thence to hiring non-family personnel. Clearly, expansion beyond the family firm was a critical transition in the scale of operation. The formation of personalistic interactions was the typical means used to bridge this gap so as to guarantee the essential trusted and skilled management and factory help. Many entrepreneurs seem to have profited from observation of and, perhaps more importantly, responsible participation in the business operations of fathers, mothers, or siblings. In addition, the family residence, almost without exception, was itself the site of the enterprise or was built on the premises of the business operation. The factory site thus was frequently multipurpose, which carries a number of advantages. Family firm organization obviously has disadvantages too, but on balance the advantages (the flexibility of labor allocation, the costlessness of labor, the increased concern for the enterprise and its facilities) may be crucial in the early evolution of enterprises in a developing country. Although nuclear family bonds

are perhaps the surest ones, quasi-familial bonds when properly formed were apparently just as effective and sometimes even more practical (given the frequency of intra-familial conflict).

Second, although the entrepreneurs studied had all been engaged in rather specialized businesses, many were distinguished by having been generalists—people broadly experienced, skillful, and capable in a wide variety of activities. Taking up entirely new and different occupations a number of times by middle age must (if one succeeds reasonably well) engender a certain sense of confidence in one's abilities to cope and to improvise, as well as teach one his limitations. Such challenges call forth resourcefulness and initiative, especially, as one entrepreneur put it, since "we have to make-do for everything." The generalist—open to numerous strategies and receptive to ideas from many possible sources—was frequently ready to try something new, to learn new techniques, to innovate more quickly, than the person who always kept his eggs in one basket.

Third, socio-political competence was usually essential, and specific technical skills in the central operations of the enterprise were frequently important. In some cases these skills were acquired through formal education; just as often they were the result of self-training and informal learning. Formal education provided relevant skills for business operation (e.g., arithmetic, reading, and writing), but more important, it provided essential social skills: especially sophistication about some of the refinements of elite culture and events in the modern world, and adeptness in social interaction and interpersonal manipulations. Skills related to recognizing potential economic opportunities, for instance, as well as comprehending signs of a favorable economic climate, were nurtured in business experience, though characteristically entrepreneurs at least partly created their own opportunities. Technical skills could ordinarily be acquired; social and organizational skills were less readily come by.

Fourth, manipulation of financial and social capital were necessary to create opportunities. Financial capital to launch an enterprise rarely came from savings or from earnings from trade alone. Whether capital is borrowed from relatives, friends, banks or government agencies, it always involves social as well as economic considerations. Use of "social capital" seems to be especially important in launching an enterprise. After an enterprise has been initiated, it usually depends upon a broad base of potential influence, seldom remaining dependent upon one or a few powerful connections. In the long run, building up a loyal clientele and a reputation for quality, reliability, and service count more than influential connections. But connections do not, therefore, lose their significance, for there are many things, such as advice, professional assistance,

credit, references, and trusted employees, which can be secured through them. Building connections is part of the continuing process. Social responsibility has also been noted, resting in part on obligations growing out of paternalism toward employees. But public spirit, reflected in contributions to charities and leadership in civic organizations, also serves other important functions: goodwill, the broadening of social contacts, free publicity (advertising), and tax deductions.

Finally, the backgrounds of a high proportion of Filipino entrepreneurs include various experiences in trade and frequently in petty buy-and-sell. Western economists' expectations to the contrary, there is no overwhelming evidence of Filipinos being unable to overcome the "trade mentality." Cases analyzed reveal that while many entrepreneurs did use their operations to provide for day-to-day needs, they did not only seek a fast profit. The financial goals of entrepreneurship were generally means to the attainment of a cluster of other goals such as independence, self-esteem, prestige, influence, and an increased standard of living. Some petty entrepreneurs reinvested regularly to build for the future despite the increasing risks and anxieties of expansion.

[Exceprted from "Buy-and-Sell and Economic Personalism: Foundations for Philippine Entrepreneurship," Asian Survey. Berkeley (Calif.): Institute of International Studies, University of California, Vol. IX, No. 9, September 1969, pp. 641-666.]

The Encouragement and Training of Small Entrepreneurs in India

[The Government of India has undertaken what is probably the world's most elaborate program for fostering small industrial enterprises. Among the institutions active in this endeavor are: 1) the Small Industry Extension Training Institute, providing courses to businessmen and to training and planning officers of government small-industry programs; 2) the National Small Industries Corporation, offering special services and stimuli to potential and actual entrepreneurs.]

One. . . . . The Small Industry Extension Training Institute (SIET), Hyderabad.

TRAINING FOR SMALL INDUSTRY DEVELOPMENT

The SIET owes its existence to the increasing concern of the central government in the late fifties for the proper development of small industry in the country. Opened in 1960, it was changed in 1962 from a government department into a Government of India Society for greater flexibility. The Institute is financed by the government, and gets some revenue from the fees it charges which helps to cover the board and lodging of participants. The Ford Foundation has assisted the Institute by providing foreign consultants, books, equipment and teacher training.

SIET's Role

At present there are in India over 100,000 small-scale units registered with the State Directorates of Industries, and thousands of small units will be added every year during the Fourth Five-Year Plan. Where will the managers for those myriad industries come from? Who will train them? Certainly not one institute, but a long line of institutes will be required. It is here that the strategic roles of the Central Small Industries Organization and the State Directorates of

Industries come into play, for SIET offers management training not only to small industry managers but to consultants and trainers as well. It does not rest merely with running management courses, but chalks out prototype training courses which other training organizations may adopt. Its courses have also been given to participants from ten other countries.

What SIET does in the field of small industry management, it also achieves in the parallel endeavor of regional development. Hitherto government officers have been tending more to regulate than promote, to administer than advise, to refer to past precedents than to future possibilities, and appear to be enveloped in an aura of power. For them to respond helpfully in a developing industrial situation, with attitudes in tune with the new role of the government, calls for a radical shift in their thinking. Thus, while our Industrial Management Course makes an officer capable of skillfully dealing with a single unit at a time, our Area Development Course gives him a broader perspective of regional and national development, and the training in Extension methods helps him carry his knowledge to people at every level.

The training tasks of the Institute are twofold: 1) to provide general training in industrial management, small industry development and economics of growth and extension methods; and 2) to provide specialist (non-technical) training in industrial management and planning, and training methods for specialists in the field. The courses at the Institute are meant for individuals already engaged in industry who have some practical understanding of the issues involved.

SIET's regular courses last for about three months; this seems to be the best compromise between the maximum time that a manager can be away from his job and the minimum required for training to be effective. Besides these, the Institute now offers many shorter courses in Extension methods and Communications to meet a wider range of needs in industry. Training at the Institute is mostly done through discussion and supervised work in field situations. When there are lectures a liberal use of audio-visual methods is made. The persons undergoing training are not thought of as trainees in the conventional manner, but as active participants who engage themselves in the development of their course.

Industrial Management

The essence of small industry management is that it is generally one-man management. In larger enterprises the manager has the help of specialist colleagues in a number of fields, but the manager of a small unit has very much to depend on himself—and very much depends upon him. SIET's regular 12-week Industrial Management Course is divided into three major sections:

1. The first seven weeks are spent in the Institute acquiring basic knowledge in organization, financing, planning and manufacturing. Marketing, personnel management, communications and other important aspects are also covered. Using a balanced program of lectures, case discussions, individual and group assignments, this period widens the participant's awareness and stimulates him to understand and try out new ideas and methods.

2. For the subsequent three weeks, as a member of a small group, every participant conducts diagnostic studies in a carefully selected industrial unit under the guidance of the faculty. Each subgroup carries out whatever studies it deems necessary to understand the unit, to pinpoint key problems and to collect necessary data from available records, through work sampling, work study, production study, market studies, costing and other tools.

3. For the last two weeks of the course each group works on the material it has collected in its diagnostic studies and submits a "Report and Recommendations" to the management of the plant which it has studied.

Area Development

The course in Area Development has three versions of 11 weeks duration. The Spring course is designed to meet the specific requirements of persons who are directly engaged in promoting industrial development. The Monsoon course meets the needs of the persons who are involved in planning and programming industrial development, while the Winter course is for persons interested in overall development programs and strategies. All three programs deal with potential for economic development, programming, and promotion, but the emphasis varies in each.

The course is intensely practical. After the classroom work for five to six weeks, the participants do a field study for three to four weeks, both in Hyderabad and outside. During the field work, they prepare an industrial potential study of one area, which gets presented to the concerned people, officials and non-officials, at district and state levels. During field work, the participants have ample opportunity to practice the various extension skills acquired earlier by them in the classrooms.

The International Program

The 15 week course for non-Indians emphasizes development of insights into the process of industrialization and the cultivation of personal skills and attitudes required for promotional work. The first five weeks are devoted to document studies, classroom work

and short field visits around Hyderabad. The next seven weeks are used for field studies in selected districts, concentration of small industries, development organizations and national laboratories. The last three weeks are used for preparation of the draft outline of an action program for small industry development in the participant's country. Participants finalize their reports within four weeks of their return to their respective countries.

Specialized Courses

The following specialized courses are also offered by the Institute: Advanced Production Management; Management Accounting; Materials Management; Marketing with Export Emphasis; Training Methods and Skills; Organizational Behavior; Management Psychology; Laboratory Training for Executive Development.

Research

The SIET Institute has conducted research in: 1) entrepreneurial motivation and innovation; 2) dynamics of development in a region; and 3) appropriate technologies. Currently, projects are underway for the state government of Andhra Pradesh (industrial potential of a particular area), Stanford Research Institute (costs of urban infrastructure for manufacturing in different-sized towns or cities), Indian Planning Commission (social-psychological factors in starting a small industry unit). In addition, SIET has begun work on adapting the methods of preparing large-industry feasibility studies to small and agro-based activities.

[Excerpted from "Small Industry Extension Training Institute in India," Promotion of Small and Medium-Sized Firms in Developing Countries through Collective Actions. Paris: Organization for Economic Cooperation and Development, Development Center, 1969, pp. 145-158. Papers from the Interregional Symposium on the Exchange of Experience, Paris, 25-29 September, 1967.]

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MOTIVATING ENTREPRENEURSHIP IN BACKWARD AREAS

The National Small Industries Corporation Ltd. (NSIC) was set up in 1955 as a limited company owned by the Government of India. To assist the growth and modernization of small-scale industries, the NSIC extends the following services:

a) supplying machinery and plant on hire-purchase terms;

b) providing modern training facilities at three Prototype Production-cum-Training Centers where prototypes of machine tools and allied items are developed;

c) assisting small firms in securing contracts from central government purchasing agencies;

d) distributing to small-scale assemblers and industries, valves and transistors manufactured by M/s. Bharat Electronics Ltd. and distributing raw materials with the cooperation of the Directorate of Industries, Delhi.

Intensive Campaigns in Backward Areas

The way in which the small-scale sector used the hire-purchase facility of the NSIC during its first decade of experience pointed to a problem in its growth pattern. Forty-eight percent of the total assistance had gone to Madras, Bombay, Delhi and Calcutta cities as of 1965, while the corresponding four states of Madras, Maharashtra, Delhi and West Bengal accounted for as much as 58 percent. In contrast, really backward areas obtained very little. This trend thus added to the already serious regional imbalances in industrial development. We therefore felt the need to find ways of focusing our activities more strongly on the growth of small industry in the neglected areas. The industrialization of backward areas could contribute to the employment of idle manpower, the removal of rural-urban disparities, the utilization of resources in rural areas which otherwise would remain unexploited, and the saving of social overhead costs required in moving people from rural areas to big towns.

The foremost need in creating entrepreneurship in these areas is to raise the aspirations of the people. They have to be told convincingly of the social and economic advantages inherent in industrial activity. The rise in their standard of living as a result of successfully running an industry has to be projected and brought home to them. They have also to be told of the contribution they would make to the society and to the nation as a whole. A tool which has been

found useful in achieving this objective is the "intensive campaign" technique. Potential entrepreneurs are told about the many kinds of assistance and facilities available from the central and state governments and other institutions created to develop small industries.

Officials from these departments approach potential entrepreneurs at their doorsteps. They tell them of the types of industries they can start and the facilities they can obtain. In fact, information is provided right from the planning stage of the unit to the marketing of the end-products. Normally an entrepreneur from a rural area has to go himself from one department to another to get what he needs. He even sometimes thinks that the applications sent to the state and central government departments are not acted upon. Instead, in an intensive campaign, all the concerned officials are available to him on the spot for doing the necessary work for him. He is the center of attention of all, and the agencies concerned with the development of small industries act together, saving the individual considerable time. Much enthusiasm is created in the individual to start an industry, and this is not allowed to evaporate.

An intensive campaign can not only create new entrepreneurs, but also facilitate the modernization of existing units. Two types of small industries have been predominant in our countryside: 1) Those which are traditional avocations pursued to supplement family incomes from agriculture. These activities are usually carried on in the farmer's household with a minimum of equipment. As agricultural incomes rise, farmers often tend to give up these "avocations;" but some farmers could well be induced to expand them on a systematic basis. 2) The other type of small industries are whole-time and labor-intensive occupations of rural families. Apart from being the principal means of livelihood for these families, they provide employment and training to outside labor. These industries could well be electrified and developed into small but well organized units.

The Procedure

First, an area is selected where such a "Message of Development" is to be spread; second, a rapid survey is made to assess the potential for industrial development and for expanding the existing industries or establishing new ones. The survey work is completed by a team of experts within three to four weeks, and though it has to be speedy it must be comprehensive. Official and non-official agencies in the area concerned with the development of small industries are informed about the survey team and its purpose. Other institutions and government offices which can furnish statistics pertaining to such developmental activities as agriculture, sericulture, handicrafts, and so forth, are also informed. Members of Parliament, members of the Local Assemblies and District Boards are also informed about

the proposed survey. The program for survey is circulated among the Collectors and Revenue Authorities and their cooperation is obtained, along with the approval of the state government.

A pamphlet is then prepared and circulated summarizing the results of the survey. Campaigns are initiated at local meetings, generally presided over by a member of the state government; among those present at the meetings are the Revenue Authorities and Development Officers of the area. The various facilities offered by the central government for starting small-scale industries are explained in detail and discussed. To prevent the impression that the facilities available for small industries and the gains to be had from them are elusive and insubstantial, examples are cited. Mobile vans with diesel-driven machines for carpentry, smithy, leatherwork, and processes for the preservation of fruits and vegetables go with the campaign teams. The machines in operation prove the efficiency of mechanization. Films emphasize the great part the machines play in many parts of the country. Model schemes made up by the office of the Development Commissioner SSI are offered for sale. These give facts on the capital involved, machines required, probable margin of profit, and so forth, for different small industries.

Thus, stage by stage, by lectures, demonstrations, visual display and presentation of data, the desire in the local entrepreneurs to invest in small industries is built up. To assist those who want more information, technical staff of the Small Industries Service Institute form themselves into groups to offer specialized advice about different industries. Potential entrepreneurs are told about the National Small Industries Corporation hire-purchase scheme.

The first intensive campaign was carried out by NSIC in Jaipur, capital of Rajasthan, during November, 1965. In selecting Jaipur, a choice was made of an area which in spite of its resources has remained industrially backward. During the previous ten years, only 148 applications were received by NSIC from Rajasthan for supply of machinery on hire-purchase terms, and machinery of the value of Rs. 3.1 million only was supplied through March, 1965. [Rs. 4.75 = $1.] Immediately after the campaign, about 196 entrepreneurs came forward to start industries. The corporation has been asked to render its hire-purchase facility to them to the tune of Rs. 13.6 million. The following year a similar campaign was undertaken in Bihar, and the response was again several times the result of the previous decade's activity.

[Excerpted from How to Motivate Entrepreneurship in Backward Areas: The Intensive Campaign Technique. New Delhi: The National Small Industries Corporation Ltd., 1966, pp. ii-v, 2-3, and 7-8.]

The Industrial Entrepreneurs of Pakistan

Gustav F. Papanek

[Industrial development in Pakistan has moved at a pace quite unexpected in a poor country with no previous industry and no industrial tradition. The entrepreneurs responsible were largely indigenous traders, with little education or industrial experience, and the capital came principally from their own savings.]

This study is based on a survey of private Muslim Pakistani industrialists in the early 1960s, using data referring to 1958. The sample included 9 percent of all firms and 58 percent of the value added in manufacturing at the time, that is, it is a significant sample of those active in large-scale industry. Foreign, Hindu-owned, and government enterprises (representing one third of industrial assets) were excluded from the sample.

Education and Success in Industry

Since books on development are usually written by teachers, it is not surprising that many stress the importance of formal education. If Pakistan's entrepreneurs do not follow the script, it may be in part because some of them cannot read it. Many of Pakistan's industrialists obtained most of their education from their business-oriented families, not the school system. Respondents are likely to overstate their educational achievement; nevertheless, one third of industrial investment was in the hands of persons who said that they had, at best, completed primary school—most of whom were, in fact, without formal education.

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On the whole, this poorly educated element in the group controlled larger than average investments.

Table 1: Education of Muslim Industrialists - 1958
(rounded)

Education	No. of Firms %	Total %	Investment Controlled Total	Traditional[1] Industries	Cotton Textiles	Non-traditional[2] Industries
			(in millions of rupees)[3]			
No formal education	8.0	6.5	180	45	70	65
Primary	18.0	25.5	730	60	360	310
Secondary, incomplete	18.0	21.0	595	185	250	160
Secondary, completed	27.5	19.0	540	80	100	360
College	16.5	18.5	540	220	210	110
Post grad - general	4.5	2.0	55	0	30	25
Technical - below college	1.0	0.5	10	10	---	---
Technical - college	4.0	6.0	170	50	40	80
Technical - post grad	2.0	.5	10	10	---	0
TOTAL	99.5	99.5	2,980	660	1,060	1,260
Unknown	0.5	5.5	160	---	---	160

[1]Includes: primary processing; import processing - traditional.

[2]Includes: secondary processing; import processing - non-traditional; jute; chemicals, cement, paper; machinery, transport equipment.

[3]Rs 4.8 = $1.

More surprising, the group with little or no formal education is not primarily concentrated in the simple processing industries. They control a share of cotton textile and other non-traditional industries roughly equal to their share in industry as a whole. Actually firms in traditional industries were concentrated in the hands of the more highly educated decision-makers.

Most surprising is that lack of education seems to have been no handicap to successful performance. All firms in the survey were divided into four roughly equal groups with respect to the rate of growth in assets and the rate of return. When the highest quartile in both respects was compared with the lowest quartile, industrialists with little education seemed to be doing about as well as the average industrialist. The poorly educated industrialists also do just as well whether they run a large or a small firm, although education should be of particular importance with larger, and presumably more complex, enterprises. Industrialists with little education could handle large enterprises because they were able to hire specialized technical and management talent. They often left management to their minions, concentrating on other activities in which they were strong, especially if their background was in trade—organizing the capital and obtaining government permits. Among firms headed by decision-makers with little education, as many were in the top as in the bottom quartile on success measures, regardless of size of firm.

Table 2: Performance by Industrialists with Little Education

(No. of Firms in Each Category)

Performance Measured in Terms of	Large Firms		Small Firms		All Firms	
	Highest Quartile	Lowest Quartile	Highest Quartile	Lowest Quartile	Highest Quartile	Lowest Quartile
Rate of asset growth	7	2	8	11	15	13
Rate of return	2	6	10	7	12	13
BOTH CRITERIA	9	8	18	18	27	26

If one examines the education of decision-makers in detail, one has to be careful of sampling errors. The number of firms in some categories is small and the two indicators of performance—the rate of growth in assets over the years to 1959 and the rate of return in 1958—are often contradictory. If one is prepared to accept the total of both indicators as the best criterion of success the group with secondary education shows the best performance, with substantially more firms in the top quartiles than in the bottom one. Industrialists in charge of these firms had spent 7-11 years in school, but only marginally out-performed their competitors with little or no formal education. Those who received technical training or education beyond high school controlled firms that did much worse than average, with the worst performance by firms in the hands of technically trained industrialists. This is a paradoxical and—at least to educators, especially university teachers—a discouraging set of relationships.

Of course there are plausible explanations. Many of those with little formal education or with only secondary schooling came from traditional trading "communities" (quasi-castes). They had been indoctrinated with the importance of economic success, and the need for hard work, thrift and risk-taking to achieve it. They had learned about buying and selling. These skills and attitudes were much more useful at the early stages of industrial enterprise than much of the rote learning of moderately useful facts which was a large part of the formal education system. The sons of trading community families, especially the large merchants, also started with important advantages in terms of access to capital, access to a network of suppliers and distributors, and knowledge of the business world. On the other hand, industrialists with higher education often came from professional families with less capital, fewer business contacts, and little business experience.

Second, formal education may in fact not have been an asset during early industrial development. The educated, especially those

with technical training, might tend to concentrate on management, on technical problems, on technologically advanced industry. They may have learned to value achievements other than amassing the almighty rupee and may have become concerned with probity. All these attitudes were handicaps. The successful industrialists in the 1950s competed intensely, often with little regard for the niceties of the law, in obtaining funds and permission from government to invest in industries with a quick payoff and a minimum of technical problems. The successful industrialist, in short, was a promoter and a "robber baron," not a skilled technician and manager.

Finally, a lack of relevant education, like any scarce input, could be made good at a price. Whether executives compensated for lack of education by hiring specialized skills, or whether they just operated with greater inefficiency, the limited education for the whole group of industrialists could have contributed to higher costs than would otherwise have been incurred.

By the middle 1960s the situation had begun to change. Management became more important and personal contacts with other businessmen and with government officials less significant as the market expanded and government controls became less pervasive. New industries were more complex. Education was coming into its own. A few of the original entrepreneurs were acquiring more formal education; more were giving increasing responsibility to their educated sons and grandsons. The leading business families, which two or three generations back had often disregarded formal education, by the 1960s were rarely satisfied with secondary education for their children; now they wanted most of their sons to have a higher education. A survey carried out today would almost certainly show that the educated are more important and successful in industry than they had been in 1958—though not necessarily because of their education per se. However, if Pakistan's experience is any guide, rapid industrial development need not wait for the education of industrialists. On the contrary, education followed industrial development rather than preceding it.

Technical Knowledge and Competence

The explanation of the success of uneducated entrepreneurs is given some support by examining the sources of technical information used by industrialists. For the complex industries and the large firms, the Pakistani industrialist bought his technical information the same way he hired his transportation or his machinery. The rich merchants who became industrialists hired many foreign engineers and some plant managers, and found their accountants, lawyers, labor relations officers and most plant managers among the educated people within the country.

Nearly two thirds of all firms obtained the technical information required to operate any industrial enterprise from some member of the family controlling the firm. However, it was mainly the small firms who could rely on the technical expertise of the controlling family. In terms of investment, and especially in terms of the investment in large firms, most industrial families had too much sense to rely on family members for technical knowledge. In the new industries, usually with complex technical problems, and among the large units, over two thirds of investment was in firms that relied partly or largely on foreigners for technical information. The remaining firms in this group relied primarily on Pakistani technicians drawn from outside the decision-maker's family.

Table 3: Sources of Technical Information in 1958 - Percentages

Source of Technical Information	All Firms	All Investment	Large Firms[1] (share in investment totals) Total	Textiles	Traditional Industries[2]	Non-Traditional Industries[2]
Mainly foreigners	1.5	26.0	31.5	16.0	--	54.0
Partly foreigners, mainly Pakistani outside family	4.5	19.5	22.5	39.5	13.5	13.5
Pakistani outside family	26.0	36.0	39.5	37.0	79.0	27.5
Partly or wholly family	64.5	18.5	6.0	7.5	7.0	4.0
Unknown	4.0	0.5	--	--	--	0.5

1) Includes all firms with Rs. 1,000,000 ($200,000) or more of investment.
2) See definitions in Table 1.

During the initial period most industries had a relatively simple technology which could be acquired rather quickly by Pakistanis, and skills were bought together with the machinery. A typical arrangement for a textile mill would call for the Japanese supplier of the machinery to provide engineers to install the machines and to supervise their operation for some time. The supplier had an interest in expediting the training of Pakistani technicians so his people could leave; and if the sales contract specified satisfactory performance of the machinery before the sale was completed, the supplier had some incentive to send good technicians, and to provide adequate training.

By the 1960s, when industrialization moved to its second stage involving complex technology requiring a highly skilled technical

team, the whole industrial sector in Pakistan had become more sophisticated. There were more technically trained Pakistanis; some industrialists knew a good deal about sources of technical information and could hire foreign firms or technicians without falling into the hands of international carpetbaggers; still others made sophisticated partnership arrangements with foreign companies which provided technical, managerial, and marketing skills. It must be stressed, however, that the lack of technical knowledge, like the lack of education, was surmountable primarily where firms were large.

In the late 1960s the importance of foreigners in providing technical knowledge declined greatly, while the importance of family members probably increased. Industrialists were asked what occupation their children would follow. Of those who responded, less than one tenth thought their children would become professionals, traders or industrialists outside the family enterprise. The rest said their children had or were expected to enter the family industrial enterprise, and of these one seventh were expected to have specific technical training. One quarter of 1958 industrial assets were controlled by families that said that they had sent or were sending their children for technical training in industry. In short, a definite industrial class is emerging, distinguishable from the older business or commercial group.

As the leading firms find it increasingly possible to reduce the influence of non-family technicians, inefficiency could gradually become built in if every grandson is entitled to some important position. Most families hate to discriminate among their members; but they hate even more to fall behind in expansion and in profits. If the economic system is essentially competitive, the shift to technically trained family members could result in improved functioning of Pakistan's industry; but without effective competitive pressure, this trend could produce a decline in efficiency as nepotism puts great resources at the command of incompetents.

Activist or Business-is-all

The successful contemporary Western, and especially U.S., businessman is often pictured as a go-getter, an activist with a variety of social, civic and political activities outside his business. In Pakistan, the opposite stereotype was held in government, the universities and elsewhere of the businessman-industrialist as interested almost exclusively in his enterprise. Over half of the industrialists queried said they had no non-business interests, and close to a third said they had "few" outside interests. Less than 10 percent said they were "active" or "very active." But if one looks at the assets controlled by industrialists in various categories, a different picture

emerges. Nearly 40 percent of assets were in the hands of those "active" or "very active" in outside pursuits.

Table 4: Non-business Interests of Industrialists
(percentages)

	None	Few	Moderate	Active	Very Active	No Response
No. of Industrialists	53	29	8	5	4	(1)
Control of Assets	27	18	14	12	26	(3)

Thus the big industrialists, those with command over resources and large staffs, had a tendency to expand their important business role into other areas. These activists were often leading figures in their social-religious "communities" and sometimes in wider social organizations. Only a few of them were active in politics at the time they were interviewed (1960/61), but this activity increased later. The activists seem to run enterprises which grow less rapidly, but earn a higher rate of return than the business-is-all group. Neither group has a clear superiority if both success indicators are combined. This suggests that outside activity is not clearly detrimental, though it presumably leads to a diversion of energy; nor is it extremely useful to the firm, though it presumably provides contacts and prestige.

The Occupational Background of Industrialists

The industrialists of Pakistan had been primarily traders before 1947. In the sample, former merchants, chiefly from foreign and wholesale trade, controlled two thirds of the total assets in 1959. In many countries where indigenous industrialists are scarce, governments are sponsoring programs to develop them based on the notion that their nationals will gradually participate in the crucial industrial sector if they are first helped to become retailers, or to set up small industrial or handicraft establishments, or to work as employees in the modern sector. But Pakistan's experience is that its industrialists did not follow this route.

The occupations of industrialist families can be traced back to previous generations. The grandfathers of many of the 1958 decision-makers were already primarily wholesalers, buying and selling in undivided India. The fathers continued in trade, but shifted somewhat more to exporting and importing, while some had a secondary interest in industry. This group included the more successful of the industrialists: one third of all industrialists belonged to it but they controlled about half of all assets; they came almost entirely from the "trading communities," quasi-castes with a long history in trade.

Another substantial group had grandfathers, and to a lesser extent fathers, in agriculture. The overwhelming majority of Muslims in pre-partition India were cultivators; however, this group furnished a very small proportion of industrialists compared to their numbers in the population. Several other occupations are notable by their insignificance in the background of industrialists. Industrialists whose grandfathers were retailers, or small-scale industrialists, or in handicrafts, or employees controlled only 15 percent of all industrial assets in 1959, and the proportion is similar for those with fathers in these occupations.

One can only speculate on the reasons for the predominance of wholesale and foreign traders. The crucial obstacle to industrial enterprise was not the knowledge of particular industrial techniques nor a willingness to work with one's hands, which someone in handicrafts or small-scale industry might possess; nor was it a knowledge of such sales techniques as a retailer might have, nor acquaintance with the functioning of large organizations plus a good education, which employees of foreign firms might have. The key obstacles faced in the early period were adequate finance for investment on the required scale, plus access to foreign suppliers of machinery and to the government officials who provided permits. Establishment of industry also required some familiarity with large-scale operations, with the handling of substantial sums and a willingness to take large risks. In all these respects the wholesale and international traders had the advantages.

Table 5: Extent of Innovation in Industrial Investment by Entrepreneur's Previous Occupation

Previous Occupation	Industrial Investment in 1958 (in millions of rupees)			
	Traditional	Textiles	Non-traditional	Total
Foreign Trade	100	610	570	1,280
Internal Trade	250	200	200	650
Industry	190	230	290	710
Other	100	10	240*	350
TOTAL	640	1,050	1,300	2,990

*Includes substantial investment in sugar mills by large landowners.

International traders were the most venturesome in their post-independence investments. If all industries are divided into the three categories—traditional (simple processing and traditional import processing), cotton textiles (somewhat more daring) and non-traditional (everything else, on the whole requiring the most entrepreneurship), it is clear that the strongest innovative tendency (that is, the smallest

proportion of traditional investment) was by those previously in international trade. This group not only dominated textiles but was also most prominent in the non-traditional industries. Two thirds of the most sophisticated, capital-intensive investments in the non-traditional category (chemicals, cement, machinery, transport equipment, paper) were controlled by them.

It seems likely that former employees and industrialists who were already familiar with a traditional industry found it easiest to continue in the same industry, relying on their own technical knowledge. Those in internal trade might approach industry rather cautiously, since they could still pursue their normal trade activity. Those in international trade, however, and especially importers who were suddenly deprived of much of their normal business by new import restrictions, might be more inclined to look around for potentially very profitable industrial investments. Since the whole industrial field was in any case new to them, they knew they could not rely on their own technical knowledge, so they might do better in buying technical expertise in completely new industrial fields than in activities already undertaken by others. Incentives and capital were thus more important than technical knowledge or industrial background in explaining innovative activity.

The Sources of Finance

It is worthwhile to distinguish the initial investment in industry from the subsequent financing of expansion. Initial investment is defined here as the investment in setting up a firm, regardless of when the firm was established; subsequent investment financed its expansion, modernization or improvement. The data, like the rest of the survey results, end with 1959.

Clearly Pakistan's initial industrialization was substantially financed by the reinvestment of profits made in trade. Of the funds used to finance the initial establishment of firms almost half came from trade (including government contracting), if the 15 percent of funds from profits of other industrial holdings are excluded. One third of total initial investment funds came from international trade, one fifth from import trade earnings alone.

Contrary to the experience of other countries, banks and credit institutions did not play a significant role in financing the establishment of Pakistan's industry. Only 10 percent of the funds for initial investment came from commercial banks and none from government credit institutions. Roughly another 10 percent was equity investment by government (mostly by the Pakistan Industrial Development Corporation, a state enterprise) in the privately controlled firms. But the commercial banks contributed significantly to later expansion of firms,

while the government withdrew much of its investment once private firms were well established.

In setting up enterprises the family controlled firms were overwhelmingly important. Less than 5 percent of investment came from scattered shareholders, and most of this was from Directors who bought a few shares in enterprises controlled by friends on a reciprocal basis.

Table 6: Sources of Capital - Private Muslim Firms
(Rounded millions of rupees of 1958/59 assets)

Item	Original Investment	Later Investment	Later Disinvestment	Final Assets
Industry pre-partition	180	10		190
Import trade	250	40		290
Export trade	120	30		150
Internal trade	140	20		160
Govt. contracting	100			100
Trade-unspecified	5			5
Land-rural	60	20		80
Transport	15			15
Commercial banks	165	160	-10	315
Creditors	35	80	-10	105
Scattered shareholders	60	70		130
Government credit		30		30
Pakistan Industrial Development Corporation	130	10	-90	50
Government equity	35		-20	15
Foreigners (incl. Indians)	10		-30	-20*
Other		10	-10	0
Re-invested industrial earnings	205	1,300		1,505
TOTAL	1,510	1,780	-170	3,120

*A negative figure means that some original pre-1947 investment in Muslim-controlled firms by Indian nationals was included in the domestic categories, while later disinvestment was reported in the category of "foreigners."

The most startling fact about the financing of Pakistan's industry is that nearly half of the investment in 1958/59 came from re-invested industrial earnings. Overall assets doubled as profits were re-invested.

Some Conclusions

The industrial development of Pakistan differed in three fundamental respects from the early stages of the process in some of the currently developed countries. Firms were larger, technology was largely transferred from other countries, and the process was very rapid as a result of extreme incentives. Pakistan's experience provides important lessons for other countries similarly situated.

Modern technology, and its inherent widespread economies of scale, meant that the bulk of Pakistan's industrial growth was the result of establishing large units. By the time modern manufacturing was 6 percent of the National Product there were some 3,000 firms in manufacturing; but only 500 firms, with assets of one million rupees ($200,000) or more, contributed about 85 percent of the value added. Sixteen families controlled firms with one quarter of all sales of manufacturing units and 60 families controlled nearly one half. In short, the number of key entrepreneurs required to start a rapid process of industrialization in a country with a population of 100 million was only about a hundred.

The firms which they set up were largely technological carbon copies of plants in the developed world. There are good economic reasons for arguing that less developed countries should use different techniques; there are also good arguments on the opposite side. Whatever the merits of these arguments, the fact is that Pakistan's industry did rely on developed technology.

The third characteristic of Pakistan's industrial development was the speed of the process in response to extreme incentives. The modern manufacturing sector expanded from less than one percent of domestic product in 1947 to nine percent of a much larger product in the mid-1960s, and has continued to grow by 15 percent a year. Government intervention in the economy was massive and provided extensive protection from foreign competition for the developing manufacturing sector. Profits in industry were therefore very high, the rewards of becoming an industrialist were great. There were substantial disincentives to remaining an importer.

The three characteristics had a number of consequences in Pakistan. Larger units required a substantial initial investment. Since neither the commercial banks nor government investment or credit institutions were very venturesome in providing capital for the establishment of private industrial firms, would-be industrialists with a substantial sum to invest had a crucial advantage over their less wealthy rivals. Unlike the situation in the United Kingdom during its industrial revolution, the owner of the small shop or handicraft establishment was not competing with others in a similar position as he gradually expanded his enterprise; he faced, rather, competition

from large units set up by merchant-capitalists. His disadvantage was compounded by the tremendous profits which these industrial pioneers could make, giving them the capital for rapid expansion of their initial industrial holdings. No wonder the industrial structure which emerged was characterized by a high degree of concentration.

Large units, using transferred technology, also meant that technical knowledge was not a crucial asset to the entrepreneur. Technicians could be readily imported. Would-be industrialists with technical experience from handicrafts or small-scale industry found it difficult to compete with the hired talent in the large-scale enterprises headed by decision-makers with no technical background. Education and technical competence for industrialists were not a prerequisite for, but a later consequence of the early industrial development.

The Pakistan experience suggests that governments who want to promote a rapid initial industrial development without relying chiefly on direct foreign investment need not be discouraged if their country does not possess an experienced industrial class, a well-educated population, or trained technicians and managers. It need not rely on a slow process of expanding the number of indigenous retailers or processors. If it has a small group of profit-seeking merchants who either possess the capital needed or have access to it, government policies to force a number of them out of their usual occupation and into industry, and to give them the high profits required for further capital accumulation, should do the trick.

Once the industrialization process is well started, however, the country may have to cope with a high concentration of control in industry. An industrial class protected by high tariffs and other favorable regulations, possibly inclined toward nepotism and gaining in political influence, may become strongly entrenched and fail to maintain a drive toward efficiency. For political and other reasons some alternative pattern may be preferred; but a more decentralized industrial growth is likely to be less rapid in the early stages. Opening the economy to import competition at a later stage, however, can mitigate some of the potentially unfortunate aspects of concentration.

[Condensed from "The Industrial Entrepreneurs—Education, Occupational Background and Finance." Cambridge (Mass.): Development Advisory Service, Harvard University, Economic Development Report No. 128, April 1969, pp. 1-32. To be published in Development Policy II - The Pakistan Experience, Walter P. Falcon and Gustav F. Papanek (eds.), Harvard University Press, 1970.]

New Guinean Entrepreneurs

B. R. Finney

[In a remote New Guinea valley a primitive people with stone age technology, isolated from other peoples until the late 1940s, are displaying extraordinary capacity to mobilize capital and launch new enterprises. Although these are operated quite inefficiently, entrepreneurs are learning from experience, which is the only kind of instruction available to them.]

The Goroka valley, comprising 450 square miles in the Eastern Highlands District of New Guinea, is almost entirely bounded by mountain ranges. Its people lack a common name; I refer to them for convenience as Gorokans. In pre-European times, they included some 40 or 50 tribal groups with a total population of perhaps 50, 000. Despite contrasts in language and other respects between these groups, there is a broad unity among Gorokan peoples marked by similar subsistence techniques, ritual practices and other cultural features.

The Gorokans live in villages of 50 to 300 inhabitants formed around one clan or sub-clan. Even today, after a generation of Australian control, intertribal enmity may be great and occasional clashes still occur in areas remote from administration centers. Political leadership at clan or tribal levels follows the dominant Melanesian pattern: "big men" who rise to power largely through their own efforts are the leaders. Only at the extended family and patrilineage level is authority consistently linked with seniority or priority of birth. Above this level leaders are the men who attract followers because of their

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deeds rather than their age or birth order. Although skill in war and oratory was linked with leadership, economic achievement was traditionally an important if not prerequisite accomplishment of the "big man." Personal wealth accumulation and the ability to organize and manipulate complex exchanges of goods were the marks of many a successful Gorokan leader.

Subsistence farming formed the first economic nexus with a simple but adequate technology based on stone and wood tools. Farming centered around sweet potatoes, taro, yams and other vegetable foods. The pig was the main domestic animal. The second nexus was that of "luxury" activities, the production and distribution of such scarce items as tobacco, salt, palm oil, pandanus nuts and fine stone for adze blades. These goods circulated mainly by transactions between individuals and often as presents to visiting friends. Transactions involving "valuables"—notably pigs, ornamental shells, plumes and other decorative items—formed the third nexus. Pig festivals and rituals marking marriages, births, initiation and peacemaking were the primary occasions for exchanging valuables. These occasions were public affairs, usually involving transactions between clans or sub-tribes competing in the pooling of valuables and the making of presentations. They were preceded by a concerted effort of participants to build up their pig stocks through breeding and the exchange of gold lip shells for pigs from other groups. A successful presentation of many pigs (sometimes over a hundred were involved) and other valuables brought prestige to the group and to the individuals who contributed to the group's presentation.

The existence of the Gorokans and other Highlands peoples was unknown to the outside world until the 1930s when a few gold prospectors entered the Highlands. The area remained classified as uncontrolled territory until 1947. With the end of the war and the subsequent extension of control throughout the area, Europeans came as settlers seeking land for coffee plantations. The first land was alienated in 1949, followed by a minor land boom in which some thirty plantations were established. This development was cut short in the late 1950s when the administration stopped the alienation of land for plantation purposes. The abundant rainfall of Goroka and the rich soils of the area combine to produce a premium grade of coffee. And the high value per weight of this coffee meant that it could be economically airfreighted to the coast, the only way crops could be moved out of the Highlands; the Highland Highway was fully opened to commercial traffic only in 1965.

Many Gorokans supported the introduction of coffee. Although some magical assumptions (like the cargo-cults) concerning the quick acquisition of wealth were probably present, Gorokans seem to have realized that a European plantation close at hand would give them an opportunity to earn cash through land sales, wages, or vegetable

sales, and a source of supply for tools and consumer goods sold by plantation stores. The establishment of a European plantation economy led to the development of processing, marketing and transportation facilities, as well as the expansion of retail centers and service industries in the area focused around the township of Goroka. In 1966 the town had 4,816 inhabitants, including almost 1,000 Europeans. Private firms include three airlines, branches of two Australian banks, five major wholesale and retail establishments, three truck agencies, several construction companies and a half dozen small processing plants.

The Gorokan Response to Economic Opportunity

European coffee plantations became, in effect, demonstration plantations where the local people could observe cash crop production and, by working as laborers, learn something of the techniques involved. The establishment of these plantations in turn required the establishment of transportation, processing and marketing facilities which could be utilized by Gorokan producers as well. And the flow of investment into the area gave Gorokans their first regular opportunity to earn cash by working for or selling vegetables to a plantation, and to purchase goods, usually at a plantation store. This introduced them to the cash economy before they began to earn cash through the sale of their own coffee.

The Gorokan readiness to accept innovations and exploit opportunities was of equal if not greater importance to their economic growth. Their alacrity in taking up cash cropping and other enterprises, and their ingenuity in putting their land and labor and later their capital to work, indicates that their society was open and receptive to new forms of activity. Gorokan society under Australian rule was not a shattered society (by contrast with earlier experiences in some of the New Guinea coastal areas), and the people had not been shorn of their self-confidence when the opportunity came to participate in the market economy. And their traditional values and institutions prepared them well for their encounter with the commercial world. Gorokan society could be characterized as an achievement-oriented society in which both individuals and groups, in competition with other individuals and groups, sought to increase their status largely through accumulating wealth and making politic transactions with it.

Cash Cropping

Coffee is the major Gorokan cash crop, although not the first. Vegetables were sold to the administration hospital as early as 1948, and peanuts and passion fruit were introduced as cash crops in the early 1950s, but none of these crops have had the impact that coffee has had. There has been little commercial development of

vegetables except for market sales by women. Similarly, although Gorokans sell some peanuts and passion fruit, they show little interest in large-scale production of these crops, as they consider the market possibilities and the prices these crops command to be inferior to coffee. At first Gorokan coffee planting was closely supervised by officers of the Department of Agriculture, Stock and Fisheries (DASF) who tried to restrict planting to individuals or small family units and to make sure all plantations were properly laid out; but with the coffee boom of the late 1950s DASF officers could not control all Gorokan plantings.

Table 1: Gorokan Cash Crop Production and Income*
(excluding tobacco and vegetables)

Year	Coffee		Passion Fruit		Peanuts and Pyrethrum		Gross Cash Income	Approx. Population	Per Capita Cash Income
	Tons	Income $	Tons	Income $	Tons	Income $	$		$
1954/55	1+	360	209	7,114	64.5	4,774	12,248	45,800	.27
1958/59	100	40,720	449	23,624	75	3,000	67,344	49,700	1.36
1960/61	143	63,420	321	18,939	21	735	83,094	51,600	1.61
1961/62	400	177,410	463	27,317	30	1,050	205,777	52,500	3.96
1964/65	910	384,385	463	23,400	53	2,735	410,520	55,700	7.37
1965/66	1,110	464,640	380	16,824	53	2,975	484,439	57,000	8.50

*All monetary sums in this report are quoted in the Australian dollar equal to U.S. $1.12.

Although some Gorokans aided by their families cleared and planted in an "individual" manner, a great deal of coffee was planted using traditional methods of organizing group work. One common pattern was for a section of a village, sometimes a whole village, to clear land, fence and then plant it. After planting, with few exceptions, the trees were divided among individuals for their exclusive care and exploitation. Another pattern was for a man to have his land cleared and fenced by a reciprocal work party (his obligation being to join the party in preparing land for others), with planting and subsequent harvesting being left to the man and his family. A third pattern was for a prominent man to organize his followers in a "big man" manner and have them clear and plant a large area with coffee for his own exploitation. No direct payment was made to workers; the latter shared instead in the prestige that accrued to their leader for having such a large plantation and also stood to benefit from their leader's largesse in times of need. In most cases involving group planting that I have record of, the eventual control of the land and the right of harvesting falls to a single individual, or to a father and his sons.

Capital Investment

Gorokans consider the production of cash crops, particularly coffee, to be a "business." And they have not been content to confine their "business activities" to cash cropping, but have expanded them

into retailing, transport, cattle raising and other fields. This Gorokan commercial expansion, except for administration-sponsored cattle and pig projects, was neither promoted nor expected by the administration.

Gorokan investment orientation is striking. Imported goods indeed attracted them, but significantly the goods most coveted at first were tools—steel axes, knives and garden implements. It is noteworthy that as their coffee incomes increased the Gorokans did not greatly expand the range of their consumption expenditures. They chose to save much of their income—in bank accounts and in buried tin boxes—and later used it to start their own businesses. Instead of being primarily impressed by the consumption standards of Europeans, Gorokans have been most excited by European commercial activities and have sought to emulate them in investment rather than consumption.

The first major Gorokan investment activity was the construction and stocking of small trade stores in the mid-1950s. By 1958 there were five licensed indigenous trade stores in the sub-district, and the number increased slowly to 20 in 1962 but multiplied rapidly thereafter as coffee began to be sold from the extensive holdings planted in the late 1950s. By 1967 the total number of Gorokan trade stores stood at 447, approximately one for every 130 people. (Since many trade stores are unlicensed, the actual number is somewhat higher.) Gorokan-owned stores have now largely supplanted plantation stores as suppliers of retail goods to villagers.

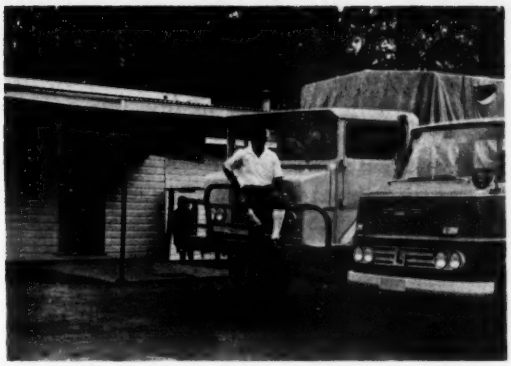
Trucks were the next major items of investment among Gorokans. They range from small utilities to heavy trucks up to five tons and are used for carrying both passengers and freight. The first commercial truck was purchased in 1957. In 1962 there were five Gorokan-owned trucks registered as Public Motor Vehicles (so that they may be used to carry passengers as well as freight). By May 1967 the number of registered Gorokan trucks increased to 68, and I have estimated the value of purchases from May 1966 to May 1967 at $130,000.

Gorokans became interested in buying cattle in the late 1950s, and in the early 1960s the DASF began sponsoring cattle projects and providing considerable extension services to promote commercial cattle production. Investment in cattle projects accelerated greatly in 1965, but has waned since because of marketing and other problems. Investments in cattle totaled $32,936 by July, 1967.

The newest form of Gorokan investment has been in small restaurants. There are now between one and two dozen of these throughout the valley. Most are minor enterprises, little more than a structure of local materials enclosing a wood stove and perhaps a table and chairs; a few, however, have a European-type structure with a modern stove and refrigerator.

Right: A well-built trade store.

Below: Truck with proud owners.



Right: Business leader with his two trucks and restaurant.
(Photos: B. R. Finney)

Sources of Capital

Gorokan investments have been almost wholly financed from their own savings. External sources like trading banks, administration agencies or European firms have contributed very little to the total amount of money Gorokans have invested. For example, between May 1966 and May 1967, I estimate that the total new cash investment by Gorokans was at least $180,000, of which less than $10,000 or 5 percent came from external credit sources. A similar proportion is estimated for some $300,000 in working capital of the stores. Gorokan investment funds have come largely from coffee receipts, with minor additions from the sale of other cash crops, wages, and other sources. Cash that women earn from vegetable sales at the Goroka market appears to be primarily used for domestic purchases and does not materially enter into investment funds.

How are Gorokan investment funds formed? This question is crucial: with a yearly income of less than $10 per capita from coffee (and less than $20 in all), investment in trucking ventures that involve vehicles costing several thousands of dollars, in trade stores and other projects would seem to require some mechanism of capital formation. Personal accumulation of savings is important, but because

only a few Gorokan individuals are able to accumulate sufficient funds for major investments, accumulation must be combined with a method of drawing together the capital of many individuals. The method used by Gorokans is an informal process, unrecognized in New Guinea law, by which a group of persons varying from a few to several hundred pool their savings for the purchase of a vehicle or the construction and stocking of a trade store.

The number of persons contributing funds for an investment depends largely on the capital requirements of that investment. A modest store built of local materials and stocked with a few cases of tinned fish, rice and other items, might require a cash outlay of about $75, which is easily within the range of the combined savings of several men. Larger stores built of European materials and extensively stocked usually require several hundred to over a thousand dollars. Because of the great cost of trucks (between $1,500 and $5,000), Gorokans almost always purchase them with pooled funds. During the coffee season it is a common sight in town to see a group of villagers gathered in a truck agency while their combined fund of several thousand dollars—often in shilling pieces—is being counted before a vehicle is purchased. Although most truck purchases appear to involve mainly people from one or several related villages, in some cases contributions are drawn from sources distributed across local group boundaries. In one case I have record of some 784 individuals from 19 villages contributing, in sums ranging from 10 cents to $484, slightly over $3,000 for the purchase of a truck.

The pooling of funds to start a project does not mean that these enterprises are wholly "communal" clan or village ventures. In all Gorokan enterprises built with pooled funds that I investigated, there were always one or two important men who acted in an entrepreneurial capacity in promoting financial support for the project and in directing its subsequent operation.

Why have Gorokans been so quick to pool and invest their meager funds? Gorokan investment activity may be called "conspicuous investment." Expenditure on costly consumption goods, like radios or private automobiles, is not particularly valued by Gorokans, but the purchase of a truck for carrying cargo and passengers, or a trade store for selling goods, is. And, it seems, the more highly visible the capital asset involved, like a five-ton truck or a substantial trade store on a main road, the more the investment is esteemed. The prestige and increased status Gorokans derive from such conspicuous investment are primary goals behind their investment behavior. Gorokans also expect to gain service benefits. A truck, for example, is desired by villagers to enable them to move their produce to the market, and a trade store is wanted to have trade goods easily available. The utility in such investments is particularly high in remote areas which are miles from the nearest store and which are seldom

serviced by commercial vehicles. Last, but not least, Gorokans want their investments to "earn profits," though this concept is not well defined in Western terms (see below).

Why do local people contribute to ventures which appear to be operated for the sole or main profit of the business leader involved? This question may be extended to cover the business leader's use of donated labor, and also land, for his use of larger-than-average allotments of land amount to a donation of land by other villagers using less clan land. It is too easy to assume that business leaders gain more than their fair share of resources through coercion of fellow clansmen. However, what looks like coercion to a European may, in the light of indigenous values and institutions, have a significant element of mutual benefit to all parties concerned.

The prestige element so important to Gorokan investment affects those who contribute to an investment as well as the business leader who owns or controls it. While the latter may get the major credit for a large coffee plantation, a store, or a truck, all those who contributed towards these enterprises—by donating cash or labor, or by allowing use of clan lands—enjoy some gain in status by virtue of their membership in a group conspicuous in its business activities and by their relationship with a successful business leader. Traditionally, clansmen take pride in the clan's corporative performance in the Moka (a wealth exchange ritual) and measure this against the performance of other groups. Even socially insignificant men with little or no part in the exchanges lend their efforts in preparing the dancing-grounds, building the houses, etc. The performance of the leaders of the clan in the Moka is seen by its members as the performance of the whole group.

Further, those who contribute to a commercial enterprise stand to gain service benefits, such as easy access to trade goods or transport. But, while it seems that a villager may often benefit—through gifts of goods or cash—from the largesse of a business leader he has supported, a regular income from contributions has not become a common feature of Gorokan enterprises built with pooled funds. Many businesses have simply been unprofitable; and it seems that where a business has been profitable the business leader usually retains most of the profits for his own use or for reinvestment. While gains in prestige and service benefits in many cases seem to make up for the absence of regular dividends on contributions, the lack of hoped-for profits disturbs many Gorokan contributors to business enterprises and is beginning to give them second thoughts about freely contributing their funds.

Business leaders, on their side, are well aware that their status and continued support by other Gorokans depends largely on their ability to share some of the benefits of their ventures. They know

that if they become too cavalier about giving contributors some goods or services, or if they become too self-important and want to claim exclusive right over the prestige accruing from their business activities, support for them may be withdrawn. Many are therefore careful to keep up good relations by giving gifts at the right time, providing a lift in their truck or judiciously granting credit in their trade store. They fear that if they do not keep their supporters satisfied, and begin to stand out too much above them, they will come to be regarded as "big-heads," and witchcraft will be worked against them by those dissatisfied with their stinginess or jealous of their prominence.

One successful Gorokan with whom I discussed this question told me that he, as a business leader, has to be very careful to provide truck rides or trade store credit when required, and not to act too bit but, as he put it, to "sit down level" with the people in his area. "I say they (the assets) do not belong to me, they belong to all the people who pooled their money—I manage them, that's all. I don't brag to the people; it would be no good to say they belong to me, or the people would like to injure me or something."

Trade Store and Truck Operation

At first the stores often took in less money than was invested in stock, and were frequently forced to close permanently if no further investment funds were available, or temporarily if funds might be forthcoming in the future. Lax handling of funds, theft, and a too generous credit policy figured in many store failures, but a more fundamental factor was pricing. In the early days an owner would commonly buy his goods in Goroka township at prices equal to or only slightly lower than retail prices there. Then he would pay a trucker to transport the goods to his village. Faced with the problem of pricing the goods he frequently resorted to the prices prevailing in Goroka township for a guide, or otherwise picked a price without taking into account all his costs. Thus, many a storeowner sold his goods at a loss until his capital was exhausted and he was forced to close.

Despite disappointing early experiences, Gorokans persisted in operating and founding new trade stores, and they have begun to learn something of the rudiments of purchasing, transport and pricing. As indigenous retailing has grown, so have European wholesale firms specializing in supplying Gorokan stores. Competition among them has led to a modest lowering of the wholesale prices by 10 to 20 percent and the provision of two simple but extremely useful services. First, wholesalers send out trucks to pick up storeowners in their village and then return them with their purchases to their village. Second, wholesalers provide lists of retail prices calculated to allow a reasonable profit above the cost of stock and operating expenses. Today's storeowner should thus be able to stay

in business if he does not give away stock or run up bad debts. But very few keep any written records; of 25 stores I surveyed in 1967 only two kept a full record of goods sold and neither they nor the others could give an accounting of their profits or losses.

A hand-lettered sign proclaiming that absolutely no credit is allowed is now a feature of many stores. One typical sign read: "All clansmen are forbidden credit at this store. All sales are for cash. Credit is strictly forbidden." But this store does grant credit, as do most others I was able to obtain detailed information on. Those who have contributed to a store cannot be easily refused. However, the more acute storeowners have been able to limit their credit sales, to push debt collection or to cover bad debts by higher mark-ups, and some have been able to use credit transactions to maintain a sizable and satisfied clientele.

Trucks. Vehicles are operated in three lines of business: freight hauling for European firms, combination passenger and freight hauling for other Gorokans, and coffee buying. Gorokans have just begun to enter the commercial freight hauling field, but they have penetrated coffee buying to a greater extent and are beginning to oust Europeans who once monopolized the business. Mixed passenger and freight hauling for local villagers is the major commercial activity of Gorokan truckers. Most of this business comes from carrying cash crops and people from rural villages to Goroka township, and then returning them with their purchases.

My estimate for the maximum gross revenue potential of a truck in this trade would be about $2,500 a year, a figure which, after deductions for fuel, maintenance, depreciation and salaries (if any) would leave little or nothing in net revenue. This pessimistic estimate is supported by the testimony of many truckers who complained to me about the difficulty of making money; indeed, it would appear that most Gorokan trucking ventures must cost their owners a great deal more than they ever bring in. Aside from a seeming oversupply of trucks for the limited trade available, their unprofitability can be traced to a combination of extremely high operating costs and poor maintenance and management.

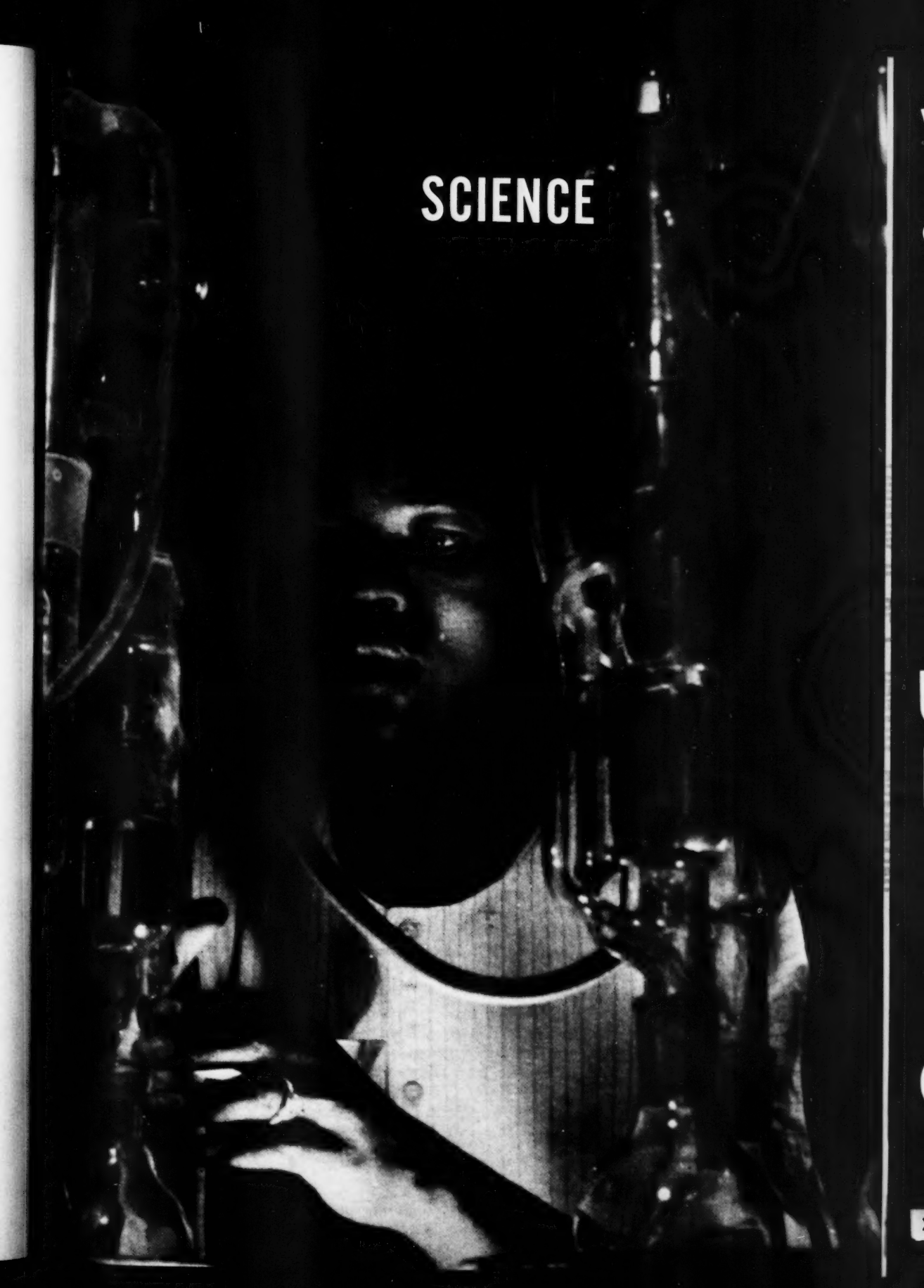
Although the main highway is fairly well maintained (though unpaved), the secondary roads to villages are almost all rutted, full of potholes and often impassable. Poor driving ability and the mechanical ignorance of Gorokan drivers add to the maintenance problem. Because of the rough roads and high fuel and repair costs, the cost of running a four-wheel drive utility or a light truck is at least 25 cents a mile. Therefore, to make a profit Gorokans must carry virtually a full freight or passenger load at all times when their trucks are on the road. Few do; typically a large portion of their mileage is taken up in riding around with little or no paying load.

Compounding this problem is the ignorance of most Gorokan truckers of the true cost of running a vehicle. They often think receipts over the cost of fuel represent profits, so when repairs are necessary there is usually no money available to pay for them and fresh capital must be raised to get the truck back on the road. This is harder to obtain for a second round of repairs, and trucking ventures often fail at this point. Management is doubly difficult with collectively owned trucks. Some 25 percent or less are individually owned or fully under the control of one man; most fall under some kind of collective control. One typical form of joint management, whereby each contributor controls the operation of the truck for a week, can be particularly unfortunate; not only does the man in charge for the week tend to keep all the receipts for himself, but he often neglects to undertake any maintenance or even to check the oil and water levels.

Despite the manifold difficulties the total picture is not entirely discouraging. Some truck ventures are beginning to be profitable, as proper maintenance and management practices are worked out by trial and error, and while such ventures are in a minority they indicate some progress in learning. If the gains in status and the transport services to the individuals and groups involved are included in an assessment of the utility of trucks, they appear as much more successful ventures than a strict appraisal of them as money-makers would indicate.

If Gorokans are to participate in the market economy other than as cash crop producers or laborers, they must learn to operate their own businesses. Though instruction in motor vehicle maintenance, bookkeeping and other valuable skills is greatly needed, Gorokans have little opportunity for such instruction. Educational activities are limited, and these classes reach only the few literate Gorokans living near the township. Informal advice and instruction offered by some European businessmen, planters and tradesmen reaches a few, but this type of aid is neither wisespread nor regular. Considering the lack of training opportunities and the difficulty most Gorokans—illiterate, unskilled in mathematics—would have with any instruction program the administration would offer, the seemingly brash Gorokan attempts to operate businesses before they know much about commerce might be the only way for them to learn business skills. This may be an expensive procedure; but if the learning trend evident among some entrepreneurs is any indication, it may prove to be the most feasible way for Gorokans to maintain their economic growth momentum.

[Excerpted from "New Guinean Entrepreneurs: Indigenous Cash Cropping, Capital Formation and Investment in the New Guinea Highlands," New Guinea Research Bulletin No. 27. Canberra: The Australian National University Press, February 1969, pp. 2-56.]


SCIENCE

AFRICAN CHEMISTRY STUDENT.
[PHOTO: UNESCO COURIER.]

A Biophysicist Looks at Science in Africa

Charles Weiss, Jr.

[Scientific research is progressing in some parts of Africa, due mainly to the efforts of particular individuals. The basic problem lies in the weaknesses of scientific education; new approaches in teaching primary school children, and a "Science Peace Corps," could make educational contributions.]

I set out in March 1967 on a science-oriented three-month tour that included Ethiopia, the three East African states, Nigeria, Ghana, Ivory Coast, and Senegal. In each of these countries I looked in on a few departments of the national universities, talked whenever possible to the president or dean of science, and had long interviews with many leading African scientists. I also visited primary and high school classes and talked with teachers, educators, ministry officials, Peace Corps volunteers and African friends from college days.

Where Disciplines Meet

Modern laboratories are a fabulous expense to an underdeveloped country, and the amount of money an African government can spare from urgent development projects is severely limited. For this reason, budgetary problems are important from the start. A research program must be able to justify itself either for its long-term benefit to the country, or because it is a study of some unexportable local system of general scientific interest. Research tied to no particular locale and aimed only at advancing a scientific discipline—the kind we are likely to call pure basic research—is a luxury difficult to justify except when absolutely necessary to retain key personnel.

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Fortunately, the line between basic and applied research is even fuzzier in Africa than it is in developed areas. Many of the continent's most important needs are for broad descriptive surveys of a kind long since completed in other parts of the world. In most African countries, for example, one of the greatest manpower needs is for descriptive taxonomists. In country after country, I was told of promising research projects that had to be abandoned because the species that produces a particular natural product or is the subject of a particular metabolic peculiarity could not be classified with confidence. In many countries, a quarter or more of the animal and plant species remain to be formally described, and most of those that have been described have scarcely been studied further. Some widely grown crops have wild varieties of possible economic importance that have never been classified, except by their local names. Not only is the missing information necessary for almost any kind of biological research, it is also of immediate practical importance to agriculture, fishing, and wildlife management. To a large extent, therefore, African science needs not so much sophisticated molecular biologists or physical organic chemists armed with the latest high-priced equipment, but workers with more traditional training who will lay down an infrastructure on which future work can be based.

A good example of the intermingling of basic and applied research—and one of the most important research projects now underway in Africa—is the systematic collection of fundamental ecological and chemical data on the enormous new lakes forming behind the hydroelectric dams at Kainji on the Niger River, at Kariba on the Zambezi, and on the Volta River in Ghana. All three dams were built by engineers concerned with obtaining maximum hydroelectric power, with little thought of the biological consequences of so revolutionary a change in the landscape. As a result, Lake Volta had already begun to rise before the first systematic studies were made of the fish and water plant populations in the Volta River. Dr. Letitia Obeng, the vivacious British-trained Ghanaian biologist who heads the Ghana Academy of Sciences Institute of Aquatic Biology, told me that she hoped during 1967 to finish the first year-long study of plankton movements, a prerequisite to scientific fishing of the new lake. In this situation, basic and applied research amount to the same thing. Dr. Obeng's most immediate problem comes from the floating plant Pistia, or water lettuce, which is transporting the larvae of snail and insect disease vectors all around the lake, threatening to create a major public health hazard. A similar program sponsored by the Food and Agriculture Organization of the United Nations is under way at the Kainji Dam in northern Nigeria.

In East Africa, the most exciting basic research project is the marine biology laboratory being built at Kunduchi near Dar es Salaam, Tanzania. It is the work of Dr. Ivor Griffiths from University

College, London, who conceived the idea and undertook a successful campaign for outside financial support. The new station will house the only systematic research on marine biology in the 4,000 miles of Red Sea and Indian Ocean coast from the Gulf of Aqaba to Madagascar—and will, at the same time, provide the basic information needed to establish a Tanzanian fishing industry.

There is an enormous range of other scientific problems that have scarcely been touched: the ecology of tropical forest and savannah, the biology and chemistry of tropical lakes and rivers, the elementary nutritional and storage properties of African staples, the biochemistry and physiology of native plants and animals, the chemistry of Africa's minerals and the basic facts of its geology. These problems are by no means purely academic. A good third of the foodstuffs in most developing countries are eaten by insect and rodent pests, many of whose habits are not well studied. The properties and ecology of tropical soils are badly understood, so that much African agricultural extension work takes place in a scientific vacuum. Most of Africa's cash crops have been introduced from abroad, while the economic potential of indigenous plants—which have survived centuries of evolutionary competition—are largely unexplored.

Before a serious effort can be mounted to examine these areas, there looms a host of educational and organizational challenges to be overcome. Educational establishments inherited from colonial days need to be revamped to turn out technically trained graduates for service in government, business and teaching in secondary schools and universities. Channels should be established for the flow of technical information to the government from the emerging local scientific community. Science policies ought to be devised to guide researchers to the areas most important to African development. These problems demand much of the time and attention of the relatively few scientists now working in Africa.

Today's Scientists

Most scientists in Africa are still European expatriates who come on "secondment" (extended leave with pay) of two to four years from a university in Great Britain or France. Many others, especially in francophone Africa and at Ibadan and Makerere, have lived in Africa most of their professional ives. African scientists are only beginning to be trained in significant numbers, and the few that are available are swamped with assignments to committees that need to hear an "African point of view."

Since administrators in African governments usually lack scientific training and an appreciation of the potential importance of research in economic development, the impetus for new technical

developments is more likely to come from within the scientific community than from the government. This makes it extraordinarily important that scientists in Africa, both native and expatriate, plan their country's future educational and research activities without much official guidance. My impression is that expatriate professors responsive to African needs are most often found in the newer universities that have grown up with a new nation. The University of Ghana and the University College at Dar es Salaam are notably conscientious in setting up research programs and academic curricula in areas of immediate concern to the countries they serve. And the science departments of Haile Selassie I University in Ethiopia, though they lag far behind those of other universities in most other respects, are nevertheless well attuned to the needs of the country. Elsewhere in Africa there are still a good many science departments pursuing research that is largely unrelated to the needs of the countries where they are located.

The worst offenders among the Europeans are competent administrators who labored under difficult conditions to build the university from the ground up during the colonial era. They now see the need to move with the times, but the prestige of their association with a long-established university inhibits their inclination to do so. Moreover, they are overworked and see their post-independence duty as a rear-guard struggle to "keep up standards"—a slogan that can become a euphemism for reluctance to make any changes they did not think of themselves. There is a parallel African stereotype—that of the African who was appointed to a responsible position for want of a better qualified candidate, and whose self-confidence is so bound up in his foreign degree that he cannot bring himself to change the system.

An approach to these problems is being worked out by Renaud Paulian, a biologist who was appointed Rector of the University of Abidjan (Ivory Coast) after many years in Madagascar. Paulian recognized that French scientists tended to regard Abidjan as just another French university at which to continue the research they did in graduate school. Rather than crack the whip over their choice of research problems, Paulian is making money available to new interdisciplinary institutes within the university to study problems of immediate national concern. This approach is doubly novel in that African science departments tend to be narrowly focused and to remain isolated from other departments in the same university.

Obstacles to Research

The typical new African university has a modern science building, not quite enough equipment to fill it, and a dedicated and reasonably well-trained faculty—with so heavy a teaching and administrative load that not very much research gets done. Outside the universities,

a good deal of work is carried on by government institutions devoted for the most part to some particular agricultural or medical problem: cocoa production, for example, or trypanosomiasis. Both kinds of research put a premium on resourcefulness and self-sufficiency. Projects must be planned long in advance, since even the simplest imported equipment will take at least three months to arrive. The equipment must be kept simple, since maintenance facilities may be a problem; skilled technicians—glassblowers, machinists, electronics repairmen—are in short supply. Moreover, tropical conditions pose storage hazards unfamiliar to European or American manufacturers. Most important is that only a few well-established universities have enough graduate students to carry out professors' research ideas. The result is that what for Africa must be a burdensome investment in university research facilities is often underutilized for want of trained people with time and energy for research, and for want of the technical support they need to use efficiently the time they do have.

Despite the difficulties, scientists with ideas and drive can attract good students and do perform good research. At the University of Ibadan (Nigeria) and Makerere University College (Uganda), for example, long-established and well-equipped laboratories in the medical school and some of the science departments turn out research to the best international standards. The University of Khartoum in Sudan (which I did not visit), and the University of Dakar, Senegal, are also known for good research.

Productive researchers in Africa usually find that their biggest problem is keeping up with scientific advances in other countries. They devote great efforts to keeping open their lines of communication with their alma maters abroad, often returning to them on sabbatical leave. They attend international conferences as frequently as their budgets will allow, and sometimes come back with a valise-full of spare parts to keep equipment running 10, 000 miles from its manufacturer. Projects requiring expensive or delicate apparatus are often done during sabbatical leave or by sending samples abroad by mail for study.

Communication between scientists inside Africa is rather poor. A chemist in East Africa is more likely to know of developments in England than of research going on in West Africa. I was gratified to learn that my scientific junket was performing a service: I was able to tell chemists in Dar es Salaam of the powerful natural molluscicide found in the common Ethiopian endode berry by Dean Aklilu Lemma at Haile Selassie I University. The berry was found to be common in Tanzania under a different local name, and is now the subject of pan-African collaboration to use its properties to rid lakes of the snails that transmit schistosomiasis (bilharzia).

A Question of Priorities

Valuable discoveries might well come from relatively inexpensive investigations in carefully chosen areas of research—but these will be of little use if the country lacks the economic infrastructure or managerial skills to exploit them. No one knows just how much research ought to be supported by underdeveloped countries. A United Nations Educational, Scientific and Cultural Organization (UNESCO) conference in Lagos put the figure at 0.5 percent of national income, but this was no more than a pious guess. Scientists have a professional conviction that research is at least as important to long-term development as economic planning, while politicians and economists look for projects that promise quick returns.

In an effort to sort out research priorities, the East African Academy of Sciences has made an inventory of research facilities in East Africa, and in 1966 it held a conference to discuss research goals for the entire region. Thus the East African Community (EAC)—the international body with responsibility for managing regional research facilities shared by Kenya, Uganda, and Tanzania—has access to a scientific clearinghouse that can at least try to provide the information and advice EAC needs. But no comparable organization exists on the national level in any of the three countries, so that national research efforts are almost totally uncoordinated. In Nigeria and Ghana, efforts to found national scientific research councils have become entwined in politics.

The Organization of African Unity maintains a Scientific and Technical Research Commission (STRC) whose job is to coordinate Africa-wide technical projects not directly under any other international body. Most important of these is a long-term campaign to eradicate rinderpest, a campaign that has succeeded in bringing the disease under control in much of the central savannah forming a broad belt just south of the Sahara. In addition, the STRC coordinates research on such continental problems as trypanosomiasis and the improvement of cereal crops for tropical environments. It has set up lists of research priorities for the guidance of granting agencies. Other international groups with research functions include the Niger River Commission and the Chad Basin Commission, each of which includes representatives of all countries bordering on these bodies of water.

Whatever the national or international importance of research, the universities themselves recognize that research is without question the key to their own prospects for development into important academic centers. In every university I visited, the faculty and administration nourished hopes for a graduate school, a full research program, and all the individual instruction and expensive equipment these require. Once a school believes it has started on the long

road upward, there is no natural stopping point short of a first-class research center. Not every school can be first class, however. For better or for worse, nationalism demands a research center; a research center demands graduate students and equipment; and these in turn demand money—money the home government does not have and the granting agencies will, I fear, become increasingly reluctant to supply.

For this reason, my guess was that research in many of the shiny new African buildings will continue to depend on the efforts of a few dedicated individuals until some of the immediate developmental needs of the country are met. It is difficult to justify to working politicians large sums for long-range research when villages near the capital lack electricity, running water, and universal primary (let alone secondary) education.

The Next Generation

Before a large-scale attack can be mounted on African scientific problems, a whole new generation of African scientists, scientific administrators, and scientifically literate civil servants must be trained. For the moment, first priority everywhere is to train secondary-school science teachers, an effort which commands the attention of the science departments of most African universities. Even so, the demand for administrators with any kind of college training is so great that many graduates of teacher training programs go directly into the government without ever seeing a classroom.

For the longer run, the greatest challenge is at the primary level. Here is where the task of educating village Africans into the modern world begins, and here is where the new generation of African scientists must ultimately be formed. Yet up to now, primary scientific education in Africa has been at a pitifully low level. Science in primary schools is confined to memorization of outdated "principles;" even the simplest laboratory equipment is still rare. A great deal of practical science, geography, and history could be taught outside the classroom with board games, cut-outs, trading cards, and educational toys. But African children do not customarily tinker with mechanical devices, do not grow things in pots or flower boxes, do not experiment with cooking; and manufactured toys are almost unknown outside the cities. These circumstances would make the introduction of educational toys no small challenge, yet their apparent potential is so great that I believe it is essential to make a start.

The greatest formal obstacle to effective science teaching in Africa is rote learning. In the words of Dr. Paulian of Abidjan University: "Up to now, African education has too often produced what I call Chinese knowledge. When this happens, there is absolutely no feeling that what is learned in school has any practical use

whatever. I have had students answer a question on an oral examination by reproducing an entire page verbatim. If I break in to ask a question, they have to start all over again." With rote learning comes a tenacious devotion to the Cambridge syllabus and its francophone analogs. Peace Corps teachers told me that any deviation from the syllabus is invariably challenged by the students, who are backed up by parents anxious that the child pass his certificate examination and escape from the farm or shop. Syllabus reform since independence has generally concentrated on Africanization of subject matter rather than deeper understanding—e.g., tropical savannah and rain forest are being studied instead of arctic ice and temperate woodland. How, then, will a new generation of African scientists and science teachers be developed?

Before the civil war in Nigeria, an imaginative attempt to improve the African scientific curriculum was lodged in a three-room flat above a grocery store in Enugu, then capital of the Eastern Region. This was a project of the Education Development Center (EDC), a Massachusetts-based firm that is seeking to develop a primary school science curriculum to introduce village children to the scientific method. Mike Savage and Bill Walton of EDC showed me how to make a microscope from a matchbox in twenty minutes, using a drop of water for a lens—an invention that could revolutionize biology teaching in primary schools in the bush. In experimental classes in Nigeria, Kenya, and Tanzania, under the guidance of EDC experts, African teachers—usually with only a ninth grade education themselves—lead children to discover scientific principles through experiments with familiar local materials. Still another program is adapting to African conditions the Nuffield plan, the British analog to the curricula that have revolutionized American high school science.

For a long time, however, scientific education in most African countries will probably continue to be dominated by the old rote approach and the attitudes it fosters. Systems of higher education discourage a student from changing his curriculum once he has entered a university: medical and engineering students cannot readily switch to science even if they wanted to. The quality of students entering African science faculties is rising simply because there is no longer room for all of the applicants to medical and engineering schools, which are regarded as more desirable. One hopes that, in the long run, wider employment opportunities for scientists and improved curricula will raise the status of science in the eyes of young Africans.

A "Science Peace Corps"

One of the most interesting ideas originated from a tour of East Africa undertaken for the Ford Foundation by Professor J. D. Watson. He suggested that American graduate students from leading

universities should take a year or two off to serve in Africa as demonstrators, undergraduate tutors, and directors of undergraduate research projects on the model of the Peace Corps or the British "study and serve" plan. In general, the suggestion met an enthusiastic response among African scientists. In the absence of graduate students, demonstrators are scarce and overworked in nearly all African universities, and undergraduates do not get an opportunity to participate in a real research project.

Most professors emphasized to me that American graduate students who may go to Africa as proposed must have a genuine commitment to do research on a problem under the supervision of a faculty member. Nearly all agreed that there were plenty of research areas in which an industrious worker could make a significant contribution with no more than BA-level training, and that undergraduate research would be a valuable addition to the curriculum that is presently impossible because of understaffing. A few, however, thought any such program was only a stopgap, and less important in the long run than training Africans to staff their own universities and bringing in senior Americans on secondment to supply needed stimulus and expertise. Perhaps the best solution would be a comprehensive fellowship program at predoctoral, postdoctoral, and professorial levels tailored to the interests of the student and the needs of the particular university.

One of the gaps in the development of African science curricula is the lack of indigenous materials on which to experiment. At present, scarce foreign exchange is spent to import European laboratory plants and animals that have no relation to the experience of African students. There is no reason why African species cannot be found to illustrate principles of biology on any level. The problem is that the properties of African plants and animals have often not been studied extensively enough to provide teaching examples. The same research that increases the basic fund of information about native plans and animals will also contribute to the development of relevant African teaching materials. Here is a wide-open field for the young researchers Dr. Watson would like to see working in Africa.

Africans studying science overseas normally take up Ph. D. thesis topics unrelated to Africa. It would be valuable if means were developed to enable them to do thesis research for U. S. degrees on African problems, including field work in Africa in conjunction with an African university. Another useful idea is to start a journal dealing with substantive and organizational problems of African science, inviting contributions from both Africans and foreigners.

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The Need for Research Within Developing Countries

United Nations Industrial Development
Organization (UNIDO), Vienna

[Research institutes located in developing countries may be justified as a means of improving research and as an aid to local industry. Exploration of natural resources and the conditions for their use is an urgent developmental need.]

Within the last decade scientific research and development activities of all kinds have expanded rapidly in the developed countries. The interests of the managerial and scientific communities of the industrialized countries have been widening, and the concept of a global economic strategy is now a subject of much discussion, especially in view of the world population explosion. The special problems of developing countries have been studied to some extent, and experts from developed countries have proposed various measures to solve them. Despite the progress achieved in such studies, it has become increasingly evident that research relating to these problems must be carried out in the developing countries. The advantage of working on the spot has led to cooperation between these specialized research institutes in the developed countries and existing institutes in developing countries, and to the establishment of new research facilities in the latter.

The most obvious reason for conducting research on the spot is to obtain direct access to the object of research, to the environment of the country and to the areas or industry under investigation. Research institutes in developed countries may send experts to the developing countries to gather the information needed for their own studies, or they may set up laboratories to simulate local conditions, but they may still overlook certain relevant details. Scientists in

developing countries are familiar with the environment; they have direct access to the object of their research and can test their findings under local conditions.

Industrial Research Institutes

Conducting research in developing countries for particular industries has the great advantage of establishing direct links between the research institutes and their clients. Researchers can collect the required information directly, identify and investigate the most urgent problems of local industry, have their proposals tested and possibly improve on them. For its part, management can explain its difficulties directly to experts.

The local research institute may not have the reputation of a high-level foreign institute, but it is in a position to assist industry with many problems—problems that are perhaps elementary in the early stages of industrialization—and thereby establish its own reputation. In this way, a research consciousness can be created, and contact with the industry will produce a "feedback" which ensures that research at the institute will be focused on the needs of the industry.

Industrial research institutes in developing countries may initially need the assistance, know-how and professional guidance of foreign institutes or international organizations. For example, a research institute in an industrialized country may train personnel for its counterpart in a developing country. This arrangement offers the advantage of an international partnership between institutes working in the same field of technological research, while the local institute remains in touch with the problems of fledgling industrial enterprises.

The activities of a well-organized industrial research institute will directly aid the flow of technological knowledge from developed to developing countries. The presence of experts who are familiar with technological advances and know the problems of local industry will ensure that the transfer of technology is correctly oriented and proceeds as rapidly as possible. The institute may also be able to assist the government in planning realistic macro- and micro-industrial measures; and it may exercise, on behalf of local industry, a certain influence as regards product standards, export promotion and import licensing.

Although these are good reasons for establishing industrial research institutes in developing countries, it should be recognized that such institutes will be subject to certain limitations. For financial reasons, they must concentrate on the fields of research dictated by the requirements of the country concerned. Even within these fields they must concentrate on the most urgent and promising

subjects because of limited funds and the need to win the confidence of local industry.

In some cases the facilities available may not be adequate for the type of research required; it is then necessary to consider carefully whether it would be more economical to provide the necessary facilities because a large volume of work is expected in the future, or to hand over the project to a foreign research institute. Regional co-operation to provide a research center where topics of common interest, or those beyond the facilities or means of a single country, could be tackled would often be the ideal solution. It may in any case be necessary to collaborate at a regional level in order to ensure a market of the requisite size for an industrial product. In this way, economies of scale may play an important part with respect to both research and the volume of production.

Interaction between scientific research and industrial application is one of the preconditions for industrial development. A steady flow of research and development findings to industry is characteristic of highly industrialized countries. At an earlier stage of economic development, research work that would not be of a sufficiently high level for industrialized countries may nevertheless contribute to local industrial needs. The level of research activities must be determined by local circumstances, both needs and resources. [NOTE: the above arguments and considerations couched in terms of industrial research are also valid for agricultural and other uses of scientific research.]

Priorities for Research at Different Stages of Development

To accelerate economic progress at an early stage of industrial development, it is more advantageous to take over products and technological processes from industrialized countries than to develop them independently. Priority should be given to research and development activities that speed up the introduction of products and processes already well tried elsewhere and that may be adapted, or modified if necessary, to suit local conditions.

Later on, emphasis will shift to applied and basic research because more advanced technologies will have to be developed. The requirements of more advanced industries will bring about the extension of research activities to fields of particular interest to local industry. Resources of manpower, capital, etc., can be used efficiently only if a proper balance is maintained between the branches of research and development according to the needs of the country.

Analysis of research and development expenditures in the United Kingdom and the United States shows a breakdown as follows:

Basic research:	12 to 18 percent;
Applied research:	22 to 26 percent;
Development research:	61 to 65 percent.

On the assumption that what has occurred in leading industrial countries since 1950 represents the optimum distribution of available funds, roughly one seventh should be spent on basic research, less than one quarter on applied research, and about two thirds on development research.

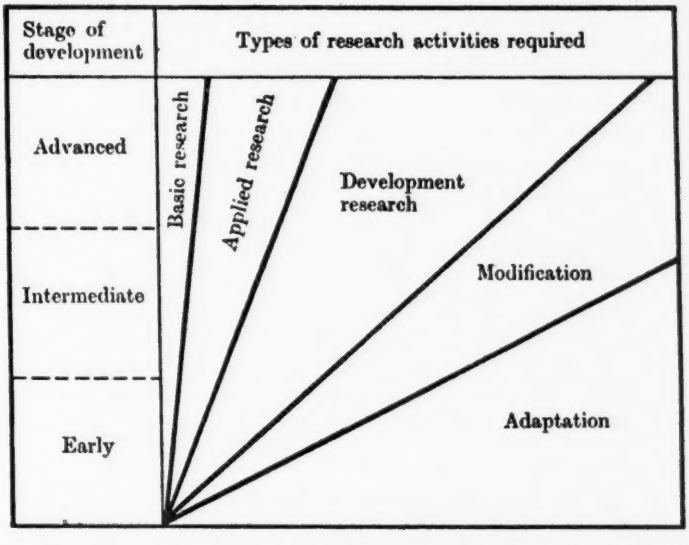

Figure 1. Relative importance of types of research activities at various stages of development in a hypothetical case

Using these data, Figure 1 shows a way of looking at the relative importance of different types of research in relation to stages of development. It is difficult to define stages of development. The most commonly used index, the per capita gross national product (GNP), may be taken as a basis for the rough classification of countries. Countries with a per capita GNP of under $75 are at the earliest stage of development; those with a GNP of up to $1,000 are at an intermediate stage; while those with a GNP of over $1,000 may be described as advanced countries. Also pertinent to stages of development in this connection are the number of scientists and engineers working in all fields and how qualified they are; the

standards of the research facilities; and the quality and quantity of existing means of production. For example: India, with a relatively low average income—implying a concentration on adaptive and modifying activities—may, by virtue of its large numbers of trained personnel and the high level of facilities in certain research and industrial centers, be able to maintain and justify more activity in basic and applied research than would be possible in a small country with a higher per capita GNP. [See Development Digest of January 1967, pp. 62-65.]

Surveys of Natural Resources

One of the most urgent tasks of scientific research is to investigate natural resources. With the aid of geological and other surveys, government agencies will be able to draft development plans based on resources known to exist. However, the most detailed description of resources is not sufficient; resources must be appraised, and feasibility studies on their utilization conducted, if adequate information for planning is to be provided. For example, discoveries of oil and natural gas fields can change the entire economic perspective of a country; however, pipelines may have to be built through desolate or mountainous areas, or ports and storage facilities constructed. Only a thorough investigation of all the relevant factors can indicate the most economic way of using natural resources. Similar considerations apply to the use of high-yielding wheat and rice seeds requiring particular conditions for their most productive growth; of newly developed plastics materials; or of local plants whose pharmaceutical properties are not yet fully known.

[Excerpted from Industrial Research. Vienna: UNIDO, 1969, UNIDO Monographs on Industrial Development—Industrialization of Developing Countries: Problems and Prospects—Monograph No. 10, pp. 9-15. UN Sales No. E.69.II.B.39, Vol. 10.]

EDITOR'S NOTE: UNESCO has estimated that some 95 percent of the world's scientific research is conducted in 30 developed countries. The distribution of science degrees per 100,000 population is: Africa 0.2, Latin America 1.4, Asia 2, Arab States 3, Europe 13, North America 37. [See UNESCO Chronicle, Vol. XIII, No. 9, September 1967, p. 325.]

Korean Science Institute: A Model for Developing Nations?

Philip M. Boffey

[The Korean Institute for Science and Technology (KIST), recently completed with U. S. assistance, has a staff recruited largely from Korean expatriates and has started contract research for government and industry. Acceptance has been difficult, but KIST is beginning to prove its capabilities.]

The goals of the $24 million KIST project are ambitious: to bring science and technology into a developing nation quickly; to spur economic development by applying science to local industrial needs; and to reverse the "brain drain" that takes so many talented individuals away from the nations that need their services. Some pessimists question whether a developing nation really needs a high-class scientific facility, and warn that the project may turn into an expensive boondoggle that pleases the ego but does little for the nation's growth. The success of the experiment probably can't be assessed for at least a decade. But most initial signs are hopeful, and there is some feeling that KIST may serve as a prototype for similar institutions in other developing nations.

The partitioning of the peninsula left North Korea with most of the industry and mineral resources and South Korea with most of the people and agriculture. South Korea has rapidly expanded its industrial capacity and its manufactured exports, but it lacks a strong scientific base. The government, which supports the bulk of the nation's research and development effort, budgeted only about $8.7 million for Research &

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Development in 1969. Industrial research is virtually non-existent, and consists almost entirely of testing and quality control. KIST is designed to fill much of this scientific vacuum. It will help businessmen select and adapt technologies already developed abroad; improve production methods; determine the best areas for investment; find new ways for using native materials; upgrade the quality of exports; and produce important products that must now be imported, such as machine tools and mechanical equipment. KIST will also hold training sessions for scientists, technicians, and managers from government, industry, and the universities.

Construction has been essentially completed. The site includes more than a dozen buildings including research laboratories, a fabrication building, a building for making pilot plants, housing for the staff and a guesthouse for visitors. Many of the labs are not yet well equippped, partly because equipment needs have not been fully worked out, and partly because the institute plans to assemble as much of its own equipment as possible locally to cut costs. The institute does have a Control Data 3300 computer, making it the most sophisticated computer facility in Korea. It also has an electron microscope donated by several Japanese companies, an emission spectrograph, various x-ray analysis equipment, and other sophisticated gear. The U. S. National Bureau of Standards has supplied various volume, length, and weight standards, and KIST will serve as the standards center for Korea. Its library, which will have some 50, 000 volumes and 1, 200 journal subscriptions, will serve as Korea's major center for technical information.

The president of KIST, and the man who is given most of the credit for KIST's early successes, is Hyung Sup Choi, a dynamic 49-year-old metallurgical engineer who was educated in Japan and the U. S. He had previously been director of the South Korean Atomic Energy Research Institute.

Establishing a research environment in a land where research is essentially unknown has not been easy. Almost all participants in the project agreed that KIST should be an autonomous, not-for-profit institute that could serve the needs of government and industry without being subject to the political control of either. A special law was drawn up which allowed the government to donate money and land to KIST, but provided that the government could not audit KIST and could not exert approval power over its plans. Choi reports that the Korean legislature got "very upset" over the idea of handing out money without controlling it. The legislature finally passed the law when Choi was out of the country, and it changed the wording to strip KIST of its autonomy. "I really got mad," Choi recalls. "I went to the President and told him he had better forget about the institution. He was surprised, but he understood what I meant." Subsequently the law

was amended to restore KIST's autonomy. Another law has encouraged industry to use KIST by providing special tax incentives. This provision angered the Ministry of Finance, which didn't want to lose the tax revenues, and also troubled other research institutions, which were not granted similar privileged status.

KIST's greatest triumph so far has been its ability to attract a competent staff. KIST sent recruiting brochures to some 800 Koreans who had gone to work in the United States or Europe. Some 500 sent back letters in reply. KIST combed the list and picked out about 70 of the most promising prospects for interviews. Choi, in his recruiting trips to the U.S., told the prospects: "You have to be interested in solving our industrial problems rather than building up your academic reputation. If you're after a Nobel Prize, you'd better stay in the United States." Ultimately, about 30 were brought back, mostly from the United States but also from Europe. With some 17 scientists hired from within Korea, the research staff numbers 47. Choi has held down recruiting within Korea so as not to denude other institutions of talent, and halted recruiting abroad until the institute builds up its research volume.

The attractions at KIST seem to be the facilities, which are excellent by any standard; the autonomous research environment; a salary scale which is high by Korean standards ($3,600 to $6,000 a year for principal investigators); and fringe benefits that include inexpensive housing and a year's paid sabbatical overseas for every 3 years of service. But the real reason for KIST's success seems to be that it gives skilled Koreans an opportunity to use their talents in the service of their country. Kyung Suh Lee, a young graduate from the Massachusetts Institute of Technology, who was working at a Cambridge consulting firm after getting his doctorate, had intended to stay in the States for at least another decade because he felt there was "nothing to go back to." But Lee had always wanted to "work for my country," and he now heads KIST's fluid machinery lab. Some of the same motivations brought back Young Ok Ahn, who had been in the United States for 14 years, graduating from Berkeley, earning a doctorate at Iowa State, and working first for Union Carbide, then for the DuPont Experimental Station. "A lot of my friends came with me," Ahn says. "We all decided to go home and see what we could do. But it would have been awfully difficult to come back if KIST weren't here." Ahn now heads KIST's polymer lab and finds the atmosphere more congenial than at the giant DuPont laboratories where "I was one of 2,000 PhDs."

One of KIST's biggest problems has been to persuade Korean businessmen that they can benefit from contract research and that KIST is competent to perform such research without spilling industrial secrets. Choi recalls that when he first approached the president of

an engine manufacturing company and proposed that KIST perform some research relating to lubricants for him, the man tried to give KIST a donation and told Choi not to bother submitting a report on the research. "I told him I wasn't begging," Choi recalls. "I said he could either take our report or forget the whole thing. He finally made a contract—our first with industry."

KIST has already completed a number of major projects. Joint teams from KIST and the Battelle Memorial Institute of Columbus, Ohio, have made surveys of 18 industrial sectors to determine what needs to be done to improve Korean industry. They have also made projections of energy supply and demand that are proving more accurate than competing government surveys. At the time I visited in late 1969, KIST had completed 36 research contracts and was working on 95 more. About half had been financed by industry, half by government. KIST's income from contract research jumped from about $300,000 in 1968 to about $600,000 in 1969 and is projected to reach $1.3 million in 1970.

Sang Joon Hahn, vice president of KIST, seems to have solved the mystery of why cars don't last very long in Korea. Japanese engines used in Korean cars generally die after covering about one third the mileage that would be expected in Japan. Hahn traced the chief problem to poor quality engine oils used in Korea, and KIST is now trying to persuade the oil manufacturers to change their processes, thus far to no avail. The government has, however, passed regulations to prevent contamination of the oil while it sits in storage containers.

In another project KIST scientists devised a means for extracting titanium and zirconium oxides, which are important in making paints and ceramics, from heavy sand. The project, which is now at the pilot plant stage, may help Korea make use of a native raw material and reduce its reliance on imports.

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[NOTE: A high-standard research institute in Mexico based on foreign funds and personnel but extending its local participation, presents an alternative possibility. See Development Digest of April, 1969, pp. 62-68.]

Science and Technology in an Unequal World

P. M. S. Blackett

[In the first Nehru Memorial lecture in New Delhi, Professor Blackett argued that poor countries, such as India, should limit basic scientific research in order to focus the work of their scarce scientific personnel on developmental or productive and managerial functions which are closely related to increasing national output.]

Science is no Magic Wand to wave over a poor country to make it a rich one. I wish that it were.

Recent studies have shown that the fraction of the gross national product (GNP) which a nation spends on Research and Development (R and D) is poorly correlated with the rate of growth of its GNP. For instance, Japan's economy has grown over three times faster than Britain's, but she has only spent a little over half as much till recently on R and D. Judged by the fraction of GNP the United Kingdom spends on R and D, by the total national stock of qualified scientists and engineers (QSEs), and by the proportion of them working in fundamental science, Britain is at the top of the European league. Judged by her economic health, I regret that Britain is less favorably placed.

I think that many of your problems here in India are surprisingly like many of our problems in Britain—in spite of the widely greater wealth per head of Britain. Like you, our primary task is to raise production in general as quickly as possible, with special attention to the export and import-substituting

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industries. To achieve this, it is necessary to attempt to make the best use of the available scientific, technological, managerial and financial resources. Since in India capital for investment is in very short supply, the main hope of increasing the rate of growth of wealth is to increase the return on the capital investment. To do this, three things are generally required: wise choice of what to invest in, a high level of technology and efficient management, and of course keen cost consciousness throughout the process.

Research and Development

In a modern advanced industrial nation, up to 3 percent of the GNP is spent by the government and industry on R and D. They do not spend all the money on R and D for its own sake; at least 90 percent of this money is intended to promote national wealth in a relatively few years. It is spent on applied science, development, design and the prototype stages of production. In Britain the total expenditure from all sources on R and D is approaching £1,000 million. Only about 10 percent, that is some £100 million, is spent on free, curiosity-directed research. Government funding in Britain and the U.S. of basic, curiosity-directed research in the universities is a direct contribution to the high quality of the teaching of the undergraduates, and thus to their value to the community in their future careers. In Soviet countries, on the other hand, most of the basic research work is done in institutes relatively detached from universities.

The Innovation Chain

It is important to consider the chain of research, development, design, production, marketing and sales and post-sales service, as a single whole. This is the process of successful innovation. The first stages of R and D consume wealth—only the later stages of production and sales produce it. It is commonly estimated that the later stages of this chain may cost five to ten times as much as the initial research, and the later stages need more qualified scientists and engineers—especially engineers and managers—than the early stages. This essentially is why science is no magic wand to convert a poor country into a rich one. It is not sensible to embark on an R and D program unless there is a high chance that the later stages of the innovation chain will be looked after.

Very often the most important national task is to improve the manufacturing efficiency of conventional goods that do not depend much on new R and D, but on good design and efficient manufacturing methods. Bicycles, automobiles, domestic machines, simple tools of all types including agricultural machinery, are all examples of vital goods which primarily need improvement in performance,

reliability and low price, rather than great novelty. This involves more QSEs actually in the design office and on the workshop floor than in the research laboratory.

According to Dr. Atma Ram, the Director General, Council of Scientific and Industrial Research, in India little R and D is done in firms, whether private or state, and nearly all in the government research establishments. This being so, it is vital that some means should be found to take care of the later industrial stages of the whole innovation chain. Whenever a major project of research, development or design is embarked on in a government establishment, the later stages of production, marketing and sales should be planned in outline at the same time. It is just not sufficient to embark on a R and D project and then to hawk it round to an unsympathetic industry, which had never been properly consulted about the inception of the project.

Importation of Technology

India does not deny itself the use of aircraft, automobiles, machine tools, computers, instruments, etc., till indigenous Indian models are designed and manufactured. Common sense prevents too much national resources being devoted to unnecessary reinvention. There is much that is admirable in the impulse to "do it yourself," even if only to prove to yourself that you can. But when doing it yourself costs a great deal of national resources in men and money, then it is important to discourage the building up of what might be called a national Robinson Crusoe syndrome.

I would be the last to deny the dangers under certain circumstances of a kind of technological colonialism coming about. One form of this is a limitation of the right to export to certain countries, which may be a condition of a license being granted by a large foreign firm trying to protect its markets. However, there are often many competing sellers of know-how, so that the potential buyer may be in a good bargaining position. In any case, this risk of limited franchise must be balanced against the great importance of the gain, for a time, of foreign technological and managerial personnel which may go with a license. Britain has gained a great deal by the import of U. S. managerial know-how, for example.

Detailed analysis confirms the common sense view that even the two giant powers cannot be self-sufficient in technology; and that the less the technological strength of a country, the more it should be dependent on imported know-how by licensing, etc., if it is to grow. Thus the smaller the indigenous technological base of a country, the greater should be the adverse balance of royalty payments. Far from such an adverse balance being a sign of inefficiency, it may well be

an indication that the country's technological resources are being wisely used in the latter stages of the innovation chain and not frittered away by research groups which may be engaged on unnecessary and unsuccessful redevelopment. Historically Japan is the outstanding case for the brilliant exploitation of imported know-how: now she is intensely creative as well. [See also Development Digest, January 1969, pp. 71-74.]

Scarce Resource

Since the stock of trained scientists, engineers and management can only rise slowly as the educational system expands, QSEs must be considered as a scarce resource. Steps must therefore be taken nationally to see that they find their way into the right positions in the economy. Many more than in the past must go into manufacturing industry, into agriculture and into management generally. QSEs must be trained to have alternative uses to research, and especially in management.

For instance, a strong force of QSEs will be needed to get into the successful production and sale of a wide range of products using imported know-how. When this is done, then the QSE force can be turned to improving the imported product and eventually in some cases to developing completely new designs. In my view the chance of successfully developing a completely new product for a world market without the practical apprenticeship of actually manufacturing and selling an existent product, is not often large.

Of course, even a country with a small technological capacity can and often should concentrate on complete development for special reasons of a few very carefully selected manufactured products—but they can be only few, otherwise the rest of manufacturing industry will be starved of manpower and financial resources. In the selection of such special fields of development, strictly non-economic factors, such as defense or prestige, may be perfectly legitimate considerations. But it is important that these non-economic factors are recognized as such, and not camouflaged by unrealistic economic forecasts.

Individual scientists and technologists, from the work-bench upwards, have a lot to contribute to the orientation of their work towards projects which will lead to production and sales, and so to a high return on the capital invested. The wise choice of R and D program cannot be left only to directors of laboratories, much less to New Delhi, but must often originate in the laboratories. Individuals will also make the decisions whether to stay in research or to move along the innovation chain towards the managerial and industrial end. I would like to see many more trained scientists and

engineers setting up their own firms to manufacture specialized goods with a high technological control. In general, I feel that a greater psychological participation of the scientist and technologist in the process of creation of material wealth, and so of economic growth, is a vital necessity.

Some may think that I have taken a too materialistic attitude. In rich countries there may be legitimate doubts whether a lower economic growth rate might not be more conducive to human welfare; but I am sure this is not the case in India. The present poverty is so great and the task of dealing with a rapidly rising population is so formidable that in my view almost everything must be sacrificed to economic growth. Economic growth is not everything: but in India today it is almost everything.

[Excerpted from the Indian and Foreign Review. New Delhi, Vol. 5, Nos. 7 and 8, January 16 and February 1, 1968, pp. 9-10 respectively. Reprinted with permission of the Jawaharlal Nehru Memorial Fund.]

Sociology of Science in Developing Countries: the Indian Experience

Ashok Parthasarathi

[If developing countries like India are to generate an indigenous and self-sustaining scientific and technological capacity, their science policies will have to be based on a better sociological understanding of the scientific community's situation in their societies and of the "socialization" process of the individual scientist.]

Is the current transitional phase of Indian society conducive to the growth of a rational discipline like science? To answer this and similar questions we need to investigate the nature of the social process that is set in motion when a highly traditional social order is brought face to face with the vigor and dynamism of modern science. We need to know how this interaction affects the rate at which scientific ideas, attitudes, and values will be comprehended and assimilated, both by the scientific community and by the general populace.

The central problem of the scientist in India is "scientific socialization or acculturation." In the highly industrialized societies science constitutes a distinct subculture within the larger general culture. This subculture has an identifiable membership, with shared values and incentives, its own rules of conduct, and its own specific process of acculturation. The theory of scientific socialization is concerned with how the individual is inducted into this scientific subculture, i.e., the underlying assumptions and rules that govern the behavior of the scientific community. There are thus two distinct types of

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socialization: the first consists of the induction of the individual into the general culture of society, while the second involves the more particular and explicit socialization into the scientific culture.

It is possible to categorize the nature and "style" of scientific activity in different societies by the extent of identity between the two socialization processes. In some social systems, the values and attitudes inculcated and imbibed during the general socialization process are consistent with, and reinforced by, those stressed in the more explicitly scientific socialization stage. Under such conditions it is likely that the scientific subculture generated will be coherent and relatively stable. But if the experiences of the individual in the two phases of socialization are inconsistent or contradictory, then tensions and instabilities in the scientific subculture are bound to result.

Home Environment

The prime source of general socialization in any society, and especially a traditional or transitional society, is the family background. An opinion survey of Indian scientists and technologists revealed that, of the 1,052 who answered the question on parental economic conditions, 80 percent came from homes where the father's income was less than Rs. 400 per month. [Rs. 7.54 = $1] In 72 percent of the cases, the father was engaged in a non-scientific profession. Thus, the home environment of the majority of Indian scientists is strongly shaped by economic insecurity and social inferiority. The primary socialization process of the future scientist often leaves him with a diffident, even pessimistic, view of life and a tendency toward suspicion in human relations. In addition, the lack of a scientific family tradition leads to a non-scientific and highly subjective attitude towards both science and society.

Experience of this kind is in sharp contradiction to the ethos and philosophy of modern science. The outlook of the Western and especially the American scientist reflects the following characteristics: an implicit faith in the solubility of problems, in man's capacity to understand and control his environment, and in the application of rationality to bring about profound changes, a preference for bold, imaginative new approaches to problems; and a depreciation of obstacles and impediments. The role of the scientific community in the United States and the United Kingdom in creating a climate of opinion in their countries favorable to an international ban on nuclear testing and the highly optimistic view that many scientists in both countries took of the technical problems involved in making such a ban politically possible, are outstanding examples of this ethos.

The consequences of the tensions and contradictions between the two stages of socialization of the Indian scientist, are not much improved when an intermediate socializing stage is introduced in the form of university experience. Much of the higher education is imparted in tradition-bound universities, socially and intellectually conservative. Great emphasis continues to be placed on rote learning, and critical inquiry and independence of thought are often, far from being fostered, positively discouraged. Free discussion, an essential element in any significant intellectual process, is almost absent. This is but a symptom, in the university context, of the generally authoritarian atmosphere characteristic of a transitional social system. Both socializing agents that operate on the Indian scientist before he formally enters his profession thus reinforce each other, and contribute to frustration and lack of confidence.

A second problem arises in the socialization process: the Indian scientist is continually impelled to participate actively and with growing commitment in a derivative culture that has been imported from abroad. The linguistic vehicle of science continues to be a foreign language, English, and it is in this that he has to acquire that "international" culture which has very different roots from his own. The demand that all this makes on the Indian scientist continually saps his self-confidence, causing even aberrations in the capacity for independent thought. Such is the predicament of those Indian scientists who have not had any education or exposure in a highly industrialized society, and especially of the rapidly growing group whose school education has not been in English.

Status and the Science Community

The growth of a "caste in science," denoting the tendency for a foreign-trained scientist to acquire a superior professional, economic and social status and generally a more dominant role than his Indian-trained colleague, is often justified by the supposedly superior quality of his competence. Yet his greater proficiency in the English language and his deeper acculturation into the operational norms and reflexes of "international" science play a significant part in it. Table 1 indicates how large a component in the average salary of the Indian scientist is due to this "caste factor" and how it varies with academic qualifications.

A major source of dissatisfaction among Indian scientists is the inequitable professional, economic and social rewards in Indian society. Within the scientific profession, a most inequitable feature is the priority given to tenure and age rather than to merit and youth, and the fact that credit for research contributions is not justly apportioned either within the research group or within the institution. As regards the monetary reward to the scientist compared to that to

Table 1: Average Salary of Scientists Trained in India and Abroad

Academic Qualification	Average Monthly Salary (Rs.)	
	Indian Trained	Foreign Trained
Doctorate	650.0	852.2
Post-graduate	396.8	704.2
Graduate	389.3	716.7

SOURCE: A. Ahmed and S. P. Gupta: Opinion Survey of Scientists and Technologists, Survey Report No. 9, Council of Scientific and Industrial Research, New Delhi, March 1967.

other professionals, the disparities are glaring. Thus, while a senior professor at a university gets a maximum monthly salary of Rs. 1,800 and the director of a national laboratory Rs. 2,500, the corresponding figure for the highest officials in the civil and diplomatic services and the public sector corporations is Rs. 3,500. Leading business executives in private industry and well-established journalists earn between Rs. 5,000-10,000 a month. Table 2 shows the distribution of scientists, engineers and medical doctors relative to civil servants in two higher income brackets. Moreover, the awareness of belonging to an "international community," creates a strong tendency among Indian scientists to compare their reward scheme with that of their colleagues in the technologically advanced societies.

Table 2: Distribution of Professionals in Government Service and Civil Servants in Higher Income Brackets

Monthly Income	Percentage of Professional Personnel			
	Natural Scientists	Engineers	Medical Doctors	Civil Servants
Rs. 1,500-2,000	2.2	2.9	1.5	15.6
Above Rs. 2,000	1.0	3.0	2.0	15.1

Note: Scientific personnel quoted are those holding Ph. D. degrees.
SOURCE: Science in Parliament, Vol. 3, No. 1, 1965.

Operational Problems

These sociological factors result in several kinds of operational problems. The first is due to the fact that scientific research and instruction in India is afflicted by an ascriptive basis for the assigning

of roles, rather than one which is achievement-determined. To take a simple example: the director of practically any scientific establishment is respected, and his decisions are implemented within the organization, not because of his competence as a scientist or administrator but simply by virtue of his being herr direktor. The scientist feels almost instinctively that even to discuss a proposal with a "superior," let alone disagree with him on it, is a violation of the "accepted" norms of behavior—not the norms in the subculture of science but those in the status-directed, hierarchical structure of his society. Thus, free discussion is constantly inhibited, particularly at the lower levels, and the scientist's work fails to be exposed to the criticism and evaluation of his professional colleagues and peers. Consequently, the essential social control mechanisms of science, which tend to safeguard if not entirely guarantee the maintenance of standards of objectivity and quality, are rendered almost inoperative.

The second operational problem is an outgrowth of the first. Due to lack of self-confidence, any criticism of professional endeavor is consistently misinterpreted as personal in motivation and direction. (However, it must be pointed out in fairness to the scientist that this failing and its consequences are common to all segments of the transitional intellectual community.)

The third question arises from a key sociological characteristic of modern science viz. that scientific research and development needs to take into account a larger and ever larger number of variables in the solving of problems. This in turn necessitates a considerable commitment on the part of the scientist to the spirit of cooperative endeavor, to the combined power of many minds. In such a situation, allegiance, both intellectual and social, remains no longer personal; it becomes corporate. It is inevitable that Indian science will have to face this problem.

In the modern age, innovation is not just a source of national security or human welfare but is indeed a whole way of life. Yet this is the very Achilles' heel of traditional and transitional societies. I am arguing, therefore, that the immediate thrust in the improvement of science in India should be sociological and psychological, the focus of study being the scientist himself, both as an individual and as the member of a social group. "Scientific socialization" is a particularly crucial problem. The generation of an indigenous, self-sustaining, and economically relevant scientific and technological capacity depends on an understanding and solution of these problems.

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LITERACY

LITERACY CLASS IN CAMEROON.
[PHOTO: INTERNATIONAL LABOUR OFFICE.]

Illiteracy, a World Problem

Charles Jeffries

[Illiteracy continues to present a massive problem in many developing countries, and it can only be overcome by concerted, well-planned government programs. Experience indicates a number of practices which should be followed if a literacy campaign is to be effective.]

The social, political and economic structure of the modern community rests on the assumption that every citizen can communicate, and be communicated with by means of the written or printed word. Yet this is a comparatively recent development in human history; and it affects, so far, only certain limited areas of the world. Some two fifths of the world's adult population—at least 700 million men and women—cannot, at the present time, read or write. The most comprehensive data available were prepared by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), covering the years 1950 and 1962. Between these dates the estimated overall percentage of illiteracy declined from 40-45% to 38-43%, but there were nearly 35 million more illiterates in UNESCO-member countries in 1962 than in 1950 as a result of population increases. Worldwide, including mainland China, I would guess that the number of illiterates rose by something like 200 million from 1962 to 1967.

Moreover, these illiterates are not evenly spread about the world but are, for the most part, concentrated in particular areas and countries. UNESCO statistics show, at one end of the scale, a well-defined

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group of countries including the United States, the Soviet Union, most of the European countries, Canada, Australia, New Zealand and Japan, in which the percentage of illiteracy is insignificant; and, at the other end, a group including most of the countries of Africa and Asia, and several in Latin America in which at least half—and in many cases more than three quarters—of the adult population (aged fifteen or over) are classifiable as illiterate.

Table 1: Percentages of Literacy and of Children Attending Primary School, by Region
(Non-Communist Countries)

	Developed Areas	Less Developed Areas				
		Total	Africa	East Asia	Latin America	Near East & South Asia
Literacy	96	40	20	58	69	28
Students as percentages of 5-14 age group	80-100	n. a.	32	49	54	36

NOTE: Table inserted by editor using U. S. Agency for International Development (AID) figures dated January 1970, based on UNESCO sources. Developed countries include Western Europe, United States, Canada, Australia, New Zealand and Japan.

To accept this as a fact is not necessarily to admit it as constituting a "problem." Throughout most of its history, the human race has managed to survive, and to develop socially, morally and economically, without most of its members being able to read and write. Certainly, the invention of reading and writing—that is to say, the use of conventional visual symbols to represent the sounds of a spoken language—goes back into remote prehistory. But even in communities which had an alphabet the knowledge and use of it was limited throughout most of history to a particular class. It was a secret code, an instrument of power, kept in the hands of the religious and political rulers and of those who directly served them. As social organization became more complex, there was a widening of the circle within which ability to read instructions and to write reports was needed; and there was a growing appreciation of the essential part which the written word had to play in the preservation and dissemination of religion, culture and ideas. Even so, the spread of literacy was a gradual process, and in the most highly developed societies its extension to the mass of the people is a fairly recent innovation. References to "literate laymen" began to appear in English records

at the end of the 14th century, but it was not until about two centuries later that, with the development of grammar schools, a literate middle class came into being to meet needs which could no longer be adequately served by churchmen. In France, according to military records, more than half of the recruits in the army in 1832 were illiterate. In the United States, 20 percent of the population of ten years of age and over were estimated, in 1870, to be illiterate.

Compulsory education of children was introduced in the United Kingdom in 1870, in France in 1882, and in most of the United States by 1900. Thus, in the long run, illiteracy faded away as successive generations of children emerged from the schools able to read and write. Universal primary education is a certain and permanent recipe for the eradication of illiteracy. But it takes the best part of a century from the date of its introduction before it is possible to say that, with negligible exceptions, every adult member of the community concerned is able to read and write. In many parts of Asia, Africa and Latin America the development process is moving so fast that special efforts to bring literacy to large segments of the adult population are essential.

Organization of Literacy Programs

The organization of literacy programs has little more than a quarter of a century's study and experience behind it. The experience of earlier literacy campaigns shows that, in any country where illiteracy presents a serious problem, it cannot practically be tackled except at government level and with the full force of government machinery and money behind the effort. The attempts at literacy teaching undertaken before the Second World War by missionaries and other philanthropic bodies or individuals in India and elsewhere were doubtless of value to the limited numbers of persons immediately affected, and useful as pilot schemes for trying out teaching methods, but their impact on the problem of mass literacy was seldom significant. Only the resources of government can suffice to mount a program covering a wide enough area to be worth while and to furnish the services, in addition to the teaching itself, which are essential if the exercise is not to be a waste of time, money and effort.

A major question is, what is it going to cost? The estimate prepared by UNESCO in 1963 assumed a cost of $5 to $8 a head. A recent attempt in the Arab countries to estimate costs produced results varying from 80 cents to $61.80 per head; so wide a variation clearly indicates lack of uniformity in the factors brought into the calculation by different authorities, among other things whether the aim was seen as elementary literacy only, or as the provision of a full program of functional literacy and adult education. What can be asserted with confidence is that the cost of educating an adult is

considerably less than that of educating a child, and that a literate adult is more immediately productive. This is one reason for regarding the financing of adult education as a very satisfactory investment of capital.

One of the first questions that arises about a literacy campaign is that of the language in which people are to be taught. It is rare, in the countries where illiteracy is rife, to find one language which is commonly spoken by the whole or even by the majority of the people who are to be made literate. There are good arguments to support the view that a person is most readily and effectively taught to read and write in his mother tongue, which may be the only one he knows. But what is to be done where there is a multiplicity of mother tongues, sometimes varying almost from village to village, as in many parts of Asia and Africa? Some of them may well never have been reduced to writing at all. Even where the written form already exists, there may well be no substantial quantity of literature available in it, apart, perhaps, from a selection of religious texts. Textbooks, primers, readers, follow-up material of all kinds have to be specially produced. Writers have to be trained. It all takes time and costs money; and at the end the newly literate person, though he may possess enough skill for elementary local needs, such as being able to read posters or instructional leaflets, has been given no key to open the gateway to knowledge in any broad sense of the word. The question arises whether literacy should not always be taught, if not in an international language such as English, at least in a language which is in general use as a first or second language over a reasonably wide area—preferably the whole or the greater part of the country concerned, for community of language is a powerful force in consolidating national unity—and in which a considerable body of people is already literate and a fair quantity of literature of some sort is already available.

The answer clearly depends upon local circumstances. A possible compromise between the two extremes is to start by teaching the mother tongue and, when the connection between sound, symbol and meaning has been established in the pupil's mind on the familiar ground, lead him on to learn to read and write in a more widely current language such as the official language of his country. It is important, however, to bear in mind that the matter is not simply one of some authority deciding, on theoretical grounds, what would be "best" for the illiterate person. The point of view of the person himself has to be considered. In any case there are practical questions, which may be decisive: the availability of teachers, the suitability of accepted scripts for reproduction by printing and typewriting, the extent to which reading matter is ready to hand, and finally, the implications of all this for the cost of the campaign.

On the question whether to use local teachers or to recruit a special staff for the purpose, there are arguments both ways, and the views and experience of governments and practitioners vary. Teachers are, after all, trained to teach; and primary school teachers, who form the largest part of the profession, are in particular trained to teach reading. They are familiar with the local language, the social conditions and the people, many of whom are the parents of their pupils. On the other hand, the professional teachers are already far too few to cope with the educational needs of the ever-growing child population without being burdened by additional tasks. Further, the training and techniques of primary school teachers are specifically directed towards the education of young children. The school teacher is accustomed to discipline his pupils, to punish them if they do not work hard or pay attention, to have what he says accepted without question. He will not find it easy to adapt himself to the entirely different attitude demanded of him by an adult class. An illiterate adult will certainly not stay in the course if the teacher, who may be of no greater intelligence or status than himself, attempts to deal with him in a condescending or hectoring manner.

Experience over the years shows that direct instruction can be and is probably best done by an army of volunteers who have undergone a very simple form of training designed purely to enable them to impart to others the elements of literacy. They do not necessarily have to be "educated" people; in the Northern Nigerian campaign, for example, the best instructors were found amongst those who had themselves but recently taken the literacy course. But if they have some general education, so much the better. This does not mean that the professional teacher should be left out of the program; his services are greatly needed for training the instructors, for supervising field work, and for follow-up. Recognizing this, some governments have begun to include study of the requirements and techniques of adult education and community development in the normal curricula of the teacher training institutions.

An experiment of an original kind was undertaken in Iran in 1962 establishing an "Army of Knowledge" [see Development Digest of January 1967, pp. 122-129]. Under this plan, youths who have completed secondary education and are due for 18 months' military service can be exempted from that service and serve in a "literacy corps." Those selected receive intensive training in barracks, after which they go to rural areas to start schools. One point which should be taken into account, however, is the possible reluctance of adults to submit to instruction by very young people, unless the latter are carefully trained to offer their services with due modesty and to show proper respect to their seniors.

The history of literacy movements throughout the world is full of failures, chiefly because the classes were started without creating a strong desire or motivation among the students for learning to read or write. Superstition can be an obstacle: so may religious or racial prejudices. Some people are skeptical and need to be convinced that literacy will really be of any use to them. Some are genuinely disturbed about the possible effects on their way of life. (One teacher trying to get men in a North African town to let their wives attend classes, said to one of them: "If your wife would come, she could learn how to write letters." "To whom?" asked the husband, bristling.) In the preparation of the public for a campaign, considerable stress can be laid on the disadvantageous position of the illiterate person in a society in which taxes have to be paid and regulations observed, so that there are unlimited opportunities for unscrupulous literates to cheat their ignorant brethren. For example, in this appeal of 1938 in Jamshedpur, India: "I have known of numerous instances in which your ignorance has been exploited by unscrupulous moneylenders, and you have been prevailed upon to sign promissory notes for amounts far in excess of what you actually borrowed. . . . It is only with the growth of literacy amongst you that you will be able to minimize the evil of indebtedness."

Modern weapons at the disposal of literacy program organizers are radio, cinema vans, film strips, television, and tape recording to ease the task of communication. But it remains generally true that the organization of any literacy campaign is not simply a matter of providing teaching staff and teaching material and of opening classes. All this is useless unless it is accompanied by a planned and intensive effort, based on careful research into local customs and conditions, to arouse the interest and enthusiasm of the people who are to be taught. Such a campaign is described by Mary Burnet in The ABC of Literacy (UNESCO, 1965):

> "It is never too late to learn! It is never too late to learn!" bellows a voice through the loudspeaker mounted in the shiny white truck, as the driver zigzags through the confusion of housewives, children and chickens in the village street. The driver jumps out with a poster in one hand and a paste-pot in the other. A few minutes later, any villager who does know how to read can explain again to his neighbor what the loudspeaker has already announced. Classes for grown-ups are going to be started. The next night people will come to show pictures and answer questions, and after that any man or woman who wants to can give his name to the teacher and start going to this new kind of school.

The teachers will not lack for students if the advantages of literacy are sufficiently publicized. But unless the students find things

to read which are intelligible, useful and attractive, they will quickly give up, and others will not even trouble to make a start. The publications have to be numerous and varied enough to sustain their interest. They have to deal with matters which are relevant to daily life, and be graded in vocabulary and syntax so that readers may progress from the simple to the more sophisticated as their reading ability develops. But they must be couched in adult, not childish, terms. As a general rule, such literature can only be satisfactorily produced by local writers familiar with the thought-processes and idioms of the people; suitable persons have to be discovered and trained. All this takes time as well as money, but it is fundamental to the organization of a successful literacy program and must be planned for from the outset. The follow-up literature must be provided in sufficient numbers. It has to be transported and distributed, probably over a wide area of scattered villages and settlements linked by poor communications. It has to be made available free of charge, or at any rate at a nominal price which is unlikely to bear any relation to the cost of production and distribution.

Teaching People to Read

There is no one universally accepted method which applies to all the varying conditions in which literacy may have to be taught. But there are general principles of teaching adult illiterates. The teacher of adults has to remember that, whoever employs or pays him, he is in effect the servant, not the master, of his pupil. The pupil may well be his equal or superior in everything but literacy, and his sole responsibility towards the pupil is to enable him to read and write as quickly and easily as possible. It is no business of his to impose penalties for failure to learn, or to make the inept pupil appear ridiculous.

Next we must consider the tools with which he has to work. Given the alphabet, the next need is to compile a basic list of words that the learner will most easily be taught to recognize and memorize. This may seem a simple matter, but in fact the preparation of such a list is long and difficult, involving much research and local knowledge. Common usage may often vary from village to village, and it is in regard to the most familiar things of life that variations are especially liable to occur.

When the word lists have been settled, and any queries about spelling satisfactorily disposed of, the way is clear to construct a primer. There can be no standard blueprint for the compilation of primers, for there are too many variable factors. The general cultural level of the community concerned is an important factor: so is the level of education and intelligence of the prospective instructors or teachers. It is generally agreed that a literacy course should be conceived in three or four stages, each self-contained:

Stage 1—preparatory, aimed at arousing interest and introducing the student to the idea of connecting symbols with sounds and meanings.

Stage 2—basic literacy, aimed at enabling the student to read a small selected vocabulary (200 to 400 words) and to begin practice in writing and simple arithmetic.

Stage 3 and subsequent—towards functional literacy, enabling the student to progress to the use of reading and writing in daily life.

The primer is concerned with the second stage. Whether it should attempt to convey information or ideas at the elementary stage is a question on which opinions differ; but at any rate it is clearly desirable that its subject matter, however simple, should be such as to engage the interest and attention of the learner. Its actual content depends on the teaching method employed. Broadly speaking, there are two kinds of method used in teaching literacy to adults, and there are arguments for and against each. The method which has been longest established and in the past most widely used is based on the recognition of the letters of the alphabet and of the sounds associated with them; this may be extended by presenting the learner with combinations of letters to form syllables, and from that he proceeds to words. This "synthetic" method is best suited to phonetic languages, that is to say, those in which letters consistently stand for the same sounds. It is less suitable for languages (such as English) in which the same letter or combination of letters may signify more than one sound. A general disadvantage of this method is that it involves a good deal of mechanical memorization which adults find difficult and boring.

The other method is based not on sound but on meaning. At the start, the learner is shown a word and told what it is, so that he associates its visual form with the word as spoken and understood. Some authorities even prefer to begin with simple phrases or sentences containing a few words. This type of method is more interesting to the adult and leads more quickly to intelligent reading, always provided that care is taken at every stage to ensure that the learner is made to understand how the word is to be analyzed into the letters and syllables which combine to produce it. A further development of this method is the "story" technique, in which the words and sentences used in successive lessons are connected so as to make up a story on some subject which is of interest to the learner. While this "global" method has evident attractions, it has been criticized on the grounds of its putting too much strain on the pupil, and of its needing the guidance of a more skilled teacher than may usually be available. Both kinds of method have their advocates, but in the most modern practice there is apparent a tendency towards an "eclectic system"

combining the elements of the different methods in the way best suited to the language and the circumstances of the program concerned. The quality of the prospective teachers, the facilities for training them, the capacities of the people to be taught and the time they can give to learning are among the factors which have to be taken into account. Whatever teaching method is adopted, the form of the primers and other teaching material will depend upon it.

Many primers produced with the best intentions have failed in their object because they were found confusing and difficult by the learners, usually on account of their attempting to convey too much at a time. Others have failed because they were boring, not enough care having been taken to ensure that the contents and illustrations would arouse the readers' interest. Many, too, have failed on account of bad layout or production, poor illustrations or none. It is fatal to the success of a primer to attempt to economize on space. Only one very simple lesson can be placed on a page; type must be large, room must be provided for illustrations which may well occupy anything from a quarter to half of the area covered; and plenty of blank space must be left to rest the reader's eye. A complete primer may run to, say, 120 pages—or rather three booklets averaging 40 pages each. Particular attention has to be paid to illustrations, which are essential to the teaching method. Line drawings are usually to be preferred to photographs. These pictures must be well drawn, kept strictly to the point without extraneous detail and convey their meaning with absolute clarity. Experience has shown that it is very necessary to pre-test the drawings by showing them to the kind of people for whom the primer is intended, before they are committed to the printer. A drawing which looks quite in order to a sophisticated viewer may convey to a person not accustomed to look at pictures a meaning quite different from what is intended; for example, in one drawing a bridge was seen as a house; in another the door of a hut was thought to be a bed. Prospective learners can easily be put off if they are shown something which they consider impossible or ridiculous: people wearing the wrong sort of clothes or doing something which is contrary to local custom.

The primer is the instructor's principal and indispensable tool; but modern developments have added some supplementary aids to lighten his task. Radio has been used with some effect in Malaya and elsewhere, and television has been tested where it is available, but on the whole the more complicated audio-visual gadgets are irrelevant for the present purpose. There are, however, several devices which are suitable and indeed indispensable for the amateur teacher. The most common and obvious is the blackboard. "Flash cards" displaying single letters, syllables or words are much used. They are held up to the class for "recognition drill," the exposure being shortened as proficiency is acquired; other sets of cards are

given out to the learners to arrange in words or sentences. Charts are also of great assistance to the instructor. A "wall newspaper" or news bulletin, using the vocabulary reached in the class's current study of the primer, is excellent not only for stimulating interest and giving practice in reading, but for conveying information and ideas.

There is no standard length for a literacy course. Some languages can be taught in fewer lessons than others. A very tentative estimate is that the preparatory (pre-primer) stage may need from four to eight lessons, and the primer stage anything from forty to a hundred. After that it may take as many as 200 lessons to bring the student to the point of functional literacy. It has been said that an illiterate person can be taught to read in six weeks, and this would seem to be a fair guess, assuming that the language is one with which he is already familiar in its spoken form, that he or she can attend lessons more or less daily, and that conditions are generally favorable. The basic literacy course for Turkish army recruits lasts less than two months; but these students are receiving practically full-time instruction. In some countries of Latin America, the duration has been fixed at six months. So, too, in Thailand and Vietnam. In these cases, however, the course has included some general subjects as well as literacy pure and simple. Any course of three months or less cannot carry the learner beyond the stage of what is technically termed "neo-literacy." To do this and no more is a waste of money and effort. He must be enabled to develop and use his new skill; otherwise all experience shows that he will quickly lose interest and sooner rather than later relapse into illiteracy. Follow-up is essential, and a literacy program should include provision for this for anything from six months to a year after the conclusion of the primary course.

[Excerpted from Illiteracy: A World Problem. New York: Frederick A. Praeger, Publishers, and London: Pall Mall Press Ltd., 1967, pp. 3-6 and 93-119. Copyright © 1967 by Sir Charles Jeffries, London, England. Reprinted with Permission.]

A New Functional Approach to Literacy

United Nations Educational, Scientific,
and Cultural Organization (UNESCO), Paris

[In many countries a new emphasis in literacy programs toward "functional" support of development project needs has grown since the mid-1960s. UNESCO is supporting and monitoring the results of numerous literacy projects, with the aim of distilling lessons for future programs.]

Until World War II, action against adult illiteracy was the almost exclusive concern of non-governmental organizations, especially of religious missions. Thus, it was due to the initiative of volunteers, and its fundamental purpose was social and humanitarian. Today, however, most governments consider themselves directly responsible for adult literacy teaching. Businessmen, industrialists and planners are showing a growing interest in the problems of literacy. They have begun to endorse the major principles adopted in Teheran by the World Congress of Ministers of Education in September 1965. The idea launched at Teheran of linking literacy teaching with the priorities of economic development has led to a new approach to literacy in many countries: first through the incorporation of literacy programs in plans for educational development, and more generally through their integration in plans for economic and social development.

Algeria's choice of the irrigated area of Bou-Namoussa, the petro-chemical complex at Arzew, and the "autonomous" estates at Staoueli as sites for pilot

Beginning on page 97, this article includes material from an interview with Acher Deleon, Director of UNESCO's Department of Adult Education and Youth Activities, Paris.

projects in functional literacy can be considered a model application of the selective strategy advocated in Teheran. Similar functional literacy projects are linked with textile factories at Chbin-el-Kom (United Arab Republic) and in the Ghab Valley (Syria), with oil installations in Saudi Arabia and Kuwait, with fisheries in Qatar, and with the semi-rural district of Tazerka in Tunisia. Others have been launched in industrial plants at Cap Vert (Senegal), for harbor works and a rubber factory at Monrovia (Liberia), in the "cooperative villages" of the Republic of the Congo, the Tuncbilek mines (Turkey), the Youth Settlement Schemes in Ceylon, the Nam-Ngum barrage in Laos, the Rodovia project in Brazil and agrarian reform areas in Chile and Guatemala.

Many countries have taken far-reaching steps in planning for literacy to introduce more rigorous programming and to fix medium-term objectives. Some Arab countries, for example, aim to make certain age groups of the population literate within ten years; others have set a target date of 15 years. A Philippine government decree and laws provide for a six-year systematic literacy campaign (1966-72). Burma hopes to attain its literacy goals even more rapidly. Iran's fourth five-year development plan (1967-72) envisages a 30 percent reduction in the illiteracy rate.

A number of countries have passed laws making it compulsory for certain sections of the population to participate in literacy programs. In Libya and Iraq laws are being drawn up to compel illiterate adults to attend classes. Elsewhere, as in Guatemala and Venezuela, new legislation aims to extend a system under which private firms invest a part of their profits in literacy programs for their employees. In Cambodia and Ecuador recent laws require literate adults to help teach illiterate fellow citizens. Other laws covering administrative reorganizations have been or are being adopted. New national literacy services have been set up in Argentina, the Republic of the Congo, Dahomey, Ethiopia, Korea, Mauritania and the Republic of Vietnam. In Indonesia, Madagascar, Mauritius, Paraguay and the United Arab Republic, existing services have been reorganized. Other countries have created new regional, provincial or municipal administrations to deal with literacy. A number of countries have given an inter-ministerial structure to the body responsible for drafting and directing the national literacy policy so that it will be better coordinated with development programs.

The impulse given by the Teheran Congress to literacy campaigns in general is shown by an encouraging increase in the literacy budgets of many countries. The cost of literacy programs represents only a small fraction of the resources assigned to education and is thus a relatively light burden; even so, the budgetary increases are a significant development. And as literacy teaching is given a more

functional emphasis, private enterprises, particularly those in the production sector, are bound to become more closely involved with such campaigns and therefore the cost of literacy projects should no longer fall on public budgets alone.

A look at recent statistics on the number of people made literate in certain countries reveals first, a sharp increase in new literates since 1965, but secondly, a persistently low ratio of these new literates as a percentage of the total illiterate population. In other words, the results are appreciable but still far from adequate.

The New Experimental Approach

UNESCO's five-year experimental program for functional literacy is directly tied to a country's economic priorities, and literacy efforts are pinpointed in areas of heavy investments. This is done as a means of speeding development of the country as a whole. We still do not know the exact correlation between literacy and development. That is why we attach so much importance to the evaluation of our results. Once it is proved such a correlation actually exists, the next step will be to determine precisely what effect literacy actually has on a nation's economy in such domains as agriculture, handicrafts, industry, trade, etc.

Each project is conceived in terms of local conditions within the framework of overall development needs and specific requirements for skilled labor. Literacy is not an end in itself, since it is not merely a matter of teaching adults reading, writing and arithmetic but a means of enabling people to make practical use of their newly acquired skills. Today each project is "tailored" to fit each community both as regards scope and timing. Literacy programs vary, depending on whether we are dealing with textile workers or rice farmers, fishermen or groundnut producers, young people or older persons, men or women, city workers or farmers.

In January 1966, the United Nations Development Program agreed to contribute $3,600,000 for functional literacy. Algeria, Iran and Mali were the first countries selected for the operation. In June of the same year, a further $2,350,000 was set aside for projects in Ecuador and Tanzania. This was the first time that substantial international funds for development went to finance a literacy program. National governments, however, contribute the major share. Thus Algeria is putting in $2,960,000; Iran, $1,700,000; Mali $3,000,000; Ecuador $1,740,000; Tanzania $5,216,000.

At least 50 countries have asked for UNESCO aid, and UNESCO preparatory missions have visited most of them. The basic criterion for all these projects is how well they contribute to development. But in order to gauge the effectiveness of such programs we

must carefully study their economic and social implications and compare the different methods and techniques used. This will enable us with time to piece together all the data needed to launch a much vaster and more complex operation. The pilot projects call for a lot of research and investigation, all of it extremely important, and should prove highly valuable for our future operations by helping to answer such questions as: how to go about planning out-of-school education, what the best methods are, where they can be applied with the best prospects for success, what types of programs to organize. On the answers to these questions will depend the measure in which the struggle against illiteracy can be broadened.

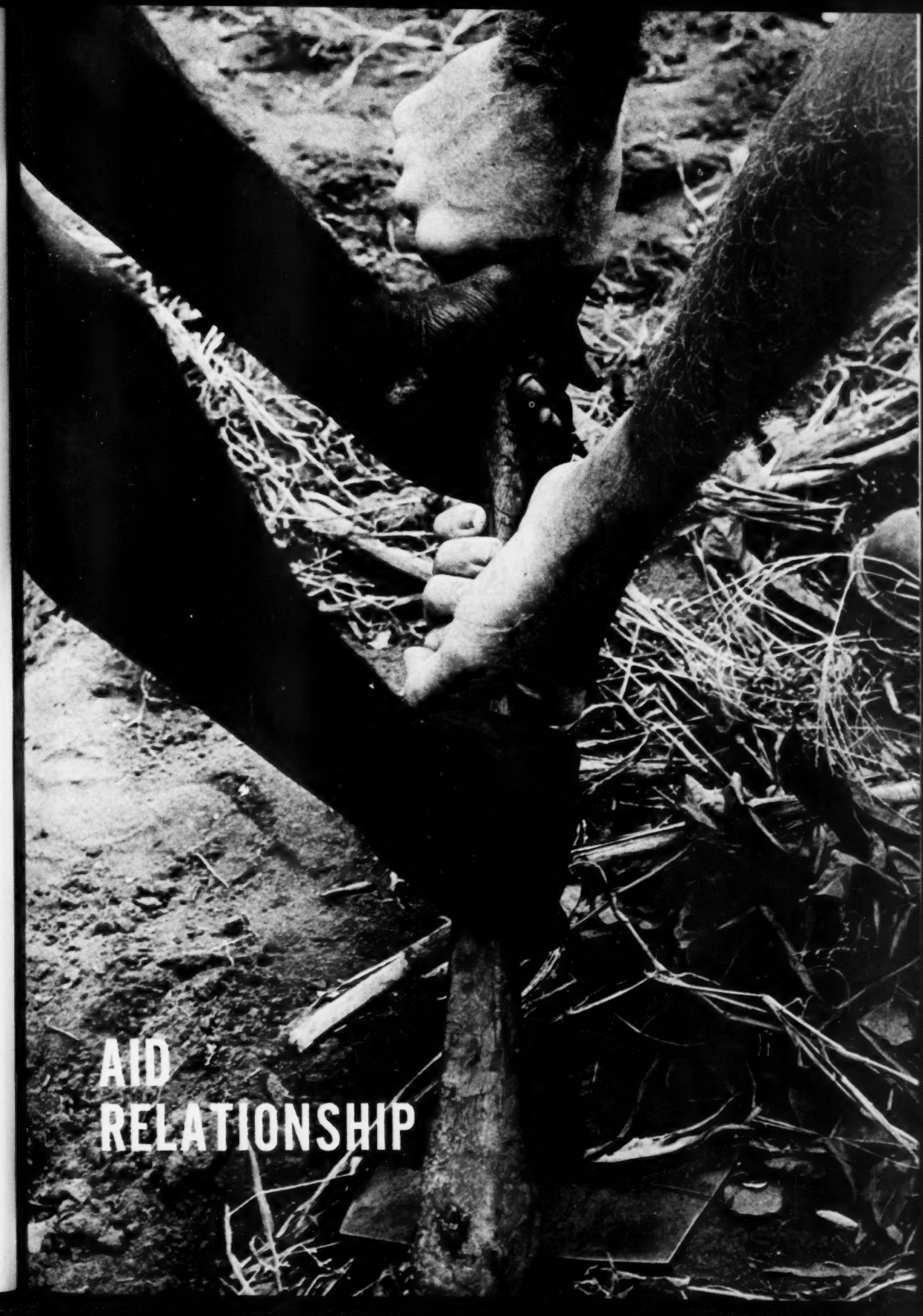
An Example

Although Venezuela is not getting UN funds for the purpose, its new functional literacy project is a part of UNESCO's experimental program. As many as 6,100 literacy centers had been set up in the country in 1958 with 40,000 volunteer teachers; and special "Literacy Legions" were created for 100,000 adult students. Yet despite this, the educational level in both towns and rural areas was far from adequate for Venezuela's economic and social development plans.

Three zones, each offering a different economic and social pattern, have been selected for the experimental project; an industrial zone, an agricultural zone, and a rural zone in the process of rapid urbanization. About 300,000 persons are involved in these projects. The industrial zone is located in the state of Bolivar, in eastern Venezuela. Here a large hydroelectric power station has been built at Macagua on the Caroni River. The Orinoco steelworks located in this region have an enormous output, most of which is exported.

The second experimental zone has been set up in the state of Portuguesa where rice, sesame and cotton production have already been increased through mechanization and irrigation. The third pilot area lies at the foot of the Andes, in the state of Lara. This region has been undergoing intensive development in recent years accompanied by rapid urbanization. This has led to the large-scale migration of rural populations into towns, the mushrooming growth of "shanty towns" in the suburbs, and a sharp rise in unemployment. It is this untapped, wasted labor potential that the experimental project hopes to recapture by offering the adults an opportunity to learn a skill or trade.

[Excerpted from "Literacy: the ABC of Development," and "A Down-to-Earth Approach to Literacy," The UNESCO Courier. Paris: UNESCO, April 1968, pp. 9-15.]


AID
RELATIONSHIP

CANADIAN HYDROLOGIST DEMONSTRATING WITH TOGOLESE A METHOD OF HOEING TO PREVENT SOIL EROSION. [PHOTO: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, C. BAVAGNOL.]

Aid Relationship for the Seventies

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[The report of the Commission on International Development (Pearson Commission) has stressed the present crisis in aid, marked by donor disillusion and dissatisfactions among recipients. The report's recommendations, while useful in specific fields, do not reach the underlying malady. A new style in aid relations is outlined here, along with novel devices for imparting more continuity and automaticity to aid flows in the 1970s.]

The Pearson Commission rightly emphasizes that the creation of the Aid-India Consortium in 1958 marks an important landmark in the evolution of a new attitude towards foreign aid that gradually modified the cold war orientation with which it had gotten underway in the early 1950s. Certainly, the size of India, its commitment to political democracy and the value of its example to others prompted a response in many quarters when, after successfully implementing its first Plan, it found itself in a serious foreign exchange crisis. Apart from the creation of the Aid-India Consortium, the establishment of the U. S. Development Loan Fund in the latter part of the Eisenhower administration and of the International Development Association in the World Bank were in large part a response to India's needs. For many influential scholars and politicians in the U. S., Canada, Britain and elsewhere India became the rallying point for a new concept of foreign aid—an essentially humanitarian transfer of resources from the rich to the poor to achieve internationally the same goals of economic opportunity for all, which had become an accepted part of national objectives in all modern societies. Let me say without reservation, as an Indian, that the response was unstinting and spontaneous, at least in the initial stages from 1958 to 1964. What was true for us was also true for a number of other countries.

But the relatively "liberal" phase in foreign aid which began around 1958 was not free from at least a tinge of cold war politics; and it brought with it its own seeds of contradiction and conflict and subsequent disenchantment. Most liberals believed in the economic theories of the big push and take-off, and were anxious to witness dramatic results during their tenure. In large part, the disenchantment also was theirs, and not that of others who had been more reluctant to part with their money. Among the liberals many are afraid of being considered soft, and are prone to invent their own form of toughness with a determination to use their power with skill and discrimination. They may be in favor of spending more money, but they have increasingly come to insist on performance. They will judge and assess, and use money as an instrument for bringing about desirable changes in policies abroad and for supporting "right-minded" groups in the struggle for local leadership.

But a recipe for international intervention or even involvement on an extensive scale cannot suit the realities of the second half of the twentieth century. It is not surprising that it should produce so soon an attitude of mutual distrust and recrimination about foreign aid itself. First and foremost, it is difficult for the donor countries themselves to live up to a truly developmental concept of aid. As long as the distribution of aid is governed to an important extent by considerations of political, ideological, geographical or historical affinity, and as long as nation-states feel compelled to compromise with principles in the midst of rapidly shifting events, it is idle to claim that the distribution of aid is or can be related strictly to economic performance. And in the absence of such a correlation, the recipient countries are all the more likely to resent an interventionist aid policy. Assessment of relative performance with a view to determining aid shares is also an invitation to the recipient countries to denigrate each other's progress and to provide ammunition to critics of aid for opposing aid to one or the other country. There has been of late a tug-of-war behind the scenes at international gatherings among developing countries for preserving or augmenting their particular apportionment of available aid.

There is no doubt that the new style in aid aroused serious resentment in the developing world. In many of the non-aligned countries, the acceptance of massive aid was not so much an act of conscious policy as some something into which one stumbled in a moment of foreign exchange crisis, something about which powerful political and intellectual groups had a reservation right from the outset. Suspicions that, at bottom, aid was an instrument of neo-colonialism or the cold war in a new guise were easily nourished and fanned in the context of increasing evidence of intervention in matters of internal social and economic policies, of open patronizing of particular local leaders, of the gap between the professions and the performance of

aid-givers and, occasionally, of some outrageous lapses in diplomacy. Recrimination, mistrust and even open hostility were further encouraged by the internal power struggle in many developing countries—and sometimes by the open conflicts between them.

Among the donors, by the mid-sixties, the advocates of aid as an instrument of the cold war had little to enthuse them. The cold war had abated in many areas (though considerably heated up in others), allies in many cases had turned fickle or frankly opportunistic or were drawn into a more neutral posture by the pressure of internal or external events. The liberals were bewildered by the reactions to their well-intentioned attempts to improve economic performance and disillusioned about the pace of progress that was possible. In the meanwhile, the impact of the Vietnam war and the emergence of a new post-war generation to full manhood were creating an altogether new situation in the affluent one third of the world. To many of the younger generation in the U. S. and Europe aid, and the desire to shape the policy of others, is only another example of the kind of annoying meddlesomeness of the middle-aged which produced Vietnam. The more militant among them perhaps salvage their conscience against the charge of indifference to the plight of the poorer countries by identifying themselves with more militant causes at home or by averring that the solution to the poverty of Asia and Africa lies in a revolutionary transformation of their basic social structure. Whatever their present mood, it is clear that the destiny of foreign aid and much else besides is beginning to pass to the hands of a generation which seeks to assert its discontinuity with the past without having so far charted its own course into the future.

The new era in foreign aid which began around 1958 had yet another guiding principle: that the responsibility for giving aid must be shared widely and equitably among the richer countries of the world. There was a desire to rope in more and more countries among the category of donors and to insist on greater harmony in aid terms and on a better sharing of the aid burden. While in itself unexceptionable and indeed beneficial to the cause of aid, this process of proliferation and standardization or coordination of aid has brought its own problems. Attitudes are bound to differ among any group of donors, and attempts to coax, cajole or coerce some into doing something generate their own reactions. The attitude to aid on the part of some donors was frankly commercial—as an inevitable adjunct to export promotion in an era of tied aid and fierce competition in the supply of capital goods. This, together with the harder terms of the loans of some countries, made aid worth much less to recipients than its face value; and since, even then, aid was in reality a loan which had to be repaid, it was easy to sneer at it as nothing more than ordinary commercial credit. For those donors whose aims were frankly commercial, the growing burden of

repayments on the part of the debtors and the demand to rephase this burden were a signal to cut their losses by limiting their new commitments. The diversification of the sources of aid thus contributed to the air of controversy and despair that surrounded aid toward the middle of the Development Decade.

To sum up, the present crisis in aid is an amalgam of many factors and not just a reaction to exaggerated claims made earlier, or the result of any general lack of appreciation about what had already been achieved in the developing world with marginal but crucial external assistance. In a sense, aid in the nature of things is bound to be doubly cursed. But the curse was perhaps heightened by the combination of things including the balance of payments difficulties of some of the rich, the divisions and dissensions among the poor, the sharpening of internal social and political tensions in many parts of the developing world, the revival of old or the new political ambitions among some of the new donors, and above all, the war in Vietnam. Right now, an altogether new variety of retreat from international responsibility seems to be overtaking the young, from which some of the more influential of the older guard are also not immune.

How are we to put new life into the aid endeavor at this stage? What are the errors most particularly to avoid? And where are we to look for a new motivation, a new style and a better aid relationship? There is no doubt that the developing countries can benefit immensely from a net inflow of external resources on concessional terms for many decades to come, and that the richer countries can afford to respond, with profit, to all the suggestions of the Pearson Commission. But equally, aid, however desirable, will continue to generate tensions unless there is a dramatic change in the present relationship between donors and recipients.

Already, a certain improvement in the aid relationship if not in the general aid climate has been discernible over the past year or two. The real question is whether the Pearson Commission's formula of mutual monitoring of aid performance in multilateral forums is likely to generate a better aid climate without reviving some of the resentments. Unfortunately, the concept of an equal partnership in development somehow lacks credibility. There has never been so far any real sense of equality between donors and recipients, even when they attend the same consortium meetings and sit around the same table in many other forums. For the recipient to be frank about the policies or attitudes of donors in a forum where aid is to be distributed is too much to expect. Criticism of donor policies, even when it comes from non-recipients, is seldom answered in the manner in which recipients are obliged to answer the most far-reaching criticism of their own policies. There are obviously two sets of rules: the donors have parliaments and public opinion which

reign supreme, so that a mere reference to them should silence all criticism; whereas the recipients should obviously be able to manipulate at will their parliaments and public opinion in the interest of appropriate development policies. A mere equality of opportunity in engaging in dialogue cannot establish parity in decision-making.

If the doctrine of mutuality in monitorship or genuine partnership in development is impractical, the insistence on performance as a yardstick for aid lacks both practical conviction and moral appeal. True, aid resources are scarce and must be wisely used. Waste can only recoil on the total effort. But performance—or its counterpart of "absorptive capacity" which was once fashionable—puts relatively backward societies at a disadvantage. One has only to attend a conference where African countries are represented to see how deep is the resentment against the approach of giving more to those who have already demonstrated the beneficial use of aid. There is also something awkward about punishing ordinary people for the temporary aberrations of their leaders. Performance for a society can only be judged over the long pull, as no society can be free from upsets and stresses and strains from time to time. The task of building societies is more akin to the bringing up of children than to the disciplining of sinners, so that a stop-go policy of aid in response to temporary vicissitudes becomes as unfair as it is artificial.

Many questions need to be examined in looking for an appropriate aid relationship. Can the issue of bilateral versus multilateral aid be resolved simply by asking more of both? Will an increase in the proportion of multilateral aid in the total be desirable even if it comes at the expense of bilateral aid? Is it time to advise at least the smaller donors to contract or wind-up their bilateral programs by making over their funds to multilateral agencies? No discussion of the aid relationship can be complete without a searching look at the growing aid bureaucracy with its own brand of specialization, vested interests and tendency to propagate and perpetuate itself. Do we really need a large and specialized cadre of career aid professionals, or an increasing proportion of those who perform developmental tasks in their own countries to be temporarily seconded to international organizations? Why is it that when we are dealing with complex and even violent convulsions in the social and political order around the developing world, the arbiters of its performance and prospects are almost invariably drawn from the ranks of the modern know-alls, the economists and lawyers? Is experience gained in the richer countries such a sure guide as to justify its preponderance in the counsels of our world organizations? There are no easy answers to these questions, but they are a vital part of any development strategy or aid relationship.

An Alternative Framework

In a basic or long-term sense there is, and indeed there can be, no alternative to the Commission's recommendations and to the main thrust of their argument—viz., focus on development as the central objective of aid, and a growing sense of partnership in the realization of the objective. It is obviously true that aid levels should increase, aid terms improve, greater regard be paid to purely developmental objectives, appropriate developmental policies encouraged, the machinery for coordination and evaluation strengthened, and a franker and freer dialogue initiated among donors and recipients alike. These are endeavors which must persist and which will inevitably hover between different degrees of success from time to time. But there is still a question of immediate priorities and emphasis, of nuance and style. Two propositions are worth placing on the table:

a) the whole debate and discussion about foreign aid needs to be conducted for some time in a low key, and the giving and receiving of aid conducted in as quiet and routine a fashion as possible, so as to avoid any more grating on each other's nerves; and

b) among all the possible ways of improving the quality and quantity of aid, the one that deserves more attention is that of imparting a greater sense of continuity or automaticity in aid by exploring some altogether new ways of mobilizing and distributing aid without too scrupulous a regard for theoretical perfection or too much involvement in each other's affairs.

The style that is most likely to suit the decade of the seventies is not one of intervention or even involvement but of duty done without too much fuss or subsequent direct bother. The enemy today in the richer countries is not so much disenchantment as indifference. The poorer countries themselves are in a mood to call it a day if aid gives the slightest suspicion of intervention. And it is doubtful if most of the voters in the affluent countries share the appetite for detailed reviews and judgments about distant countries, the inner logic of whose development they neither comprehend nor wish really to comprehend. There is sufficient vitality in the developing countries themselves to demand real and rapid performance from their leaders; and the advice of others, whether accompanied by aid or not, is more likely to be accepted the more tentatively and unconditionally it is given. The donors also are more likely to improve the quality and quantity of their aid the less they are continually badgered about matching the performance of others or invited to underwrite concrete and specific goals for advancing world development or reducing inequality.

A quiet style in aid would also mean a rough and ready approach to equality of sacrifice in aid and equity in aid distribution; over time, such kinks tend to get ironed out. It is perhaps better for the time being to summon everyone to do their best, and to let every developing country share in available aid in terms of some easily acceptable objectives such as bringing up the level of education or health facilities or urban housing or irrigation use or electricity available. Trying to add up everything into tests of performance, growth rates, take-off points or formulae for equity is perhaps less important than taking up some concrete and urgent problems which exist in almost all developing countries and tackling them as a concrete contribution of the international community. Financing total costs and not just imports might provide a welcome departure from looking at aid as largely an instrument of export promotion. Linking aid with projects with a predominantly social rather than economic content might generate more warmth and a more broad-based appreciation of the benefits of aid. When one builds houses and clears slums rather than sets up industries, the points of conflict on issues of economic policy are also minimized. There are several corollaries to this subdued and basically "aid on long-term trust" approach: it implies an encouragement to internationalization of aid, a curtailment of aid establishments to the minimum, and perhaps a greater financial role for a number of specialized agencies rather than a concentration of international effort in one or two aggressively development-minded institutions.

What is the guarantee that such an approach will augment the flow of aid, or at least prevent a decline? The blunt fact is that there is no such guarantee either way, and all that one can do is to hope for the best. The poorer countries would be well-advised in any case to plan on the basis of rather modest levels of aid, treating each increase in aid if it comes as something to be subsequently deployed rather than assumed in advance. That way lies less frustration and greater cordiality. And it is at least arguable that a quiet approach, which does not pretend to answer anything more than the satisfaction of some urgent and universally acceptable wants, is as likely to evoke a generous response from the rich as anything else.

Some Proposals

We can explore some new and imaginative avenues for imparting a greater degree of continuity and automaticity in aid flows, taking them out as far as possible from the annual wrangles over appropriations and even from the "non-decisions" of consultative groups and consortia. There is reason to believe that even the richer countries may be anxious to trade-off the right (or is it the annoyance) of annual reviews of their own intentions and policies in favor of a longer-

term commitment if simultaneously they are released from the constant pressure to do more and better.

It would be idle to pretend that alternatives can be easily suggested which are both acceptable and adequate. But one has to make a choice of where and how one chooses to fight and what rewards one is prepared to treat as a bonus if they happen to come. On our reasoning, for example, it would be more important to seek a five-year commitment for the third International Development Association (IDA) replenishment than to settle for a three-year replenishment out of fear of sacrificing a better opportunity in the future.

The idea of a link with the creation of the Special Drawing Rights is another device which needs to be seriously pursued. There is considerable appeal for this suggestion all over the world, and it is somehow easy to convince ordinary citizens that if they get something for nothing, they should be willing to share a part of it with less fortunate people.

Another promising idea would be to urge a convention whereby all developed countries agree to put repayments to their governments of capital and interest in a separate fund which would be used to make fresh loans. This, in the long run, is likely to be much more effective than the present procedures for multilateral debt refinancing which create problems of their own, such as generating a lack of faith in the credit-worthiness of the countries concerned and the feelings of unfairness engendered among donors by retrospective harmonization of past aid terms. Instead, an ordinary citizen or politician is more likely to heed the argument than even if he is not prepared to vote for more aid, he should not be in a hurry to claim his due from the poorer countries. The simple device of a separate funding of repayments to create a revolving fund for aid can go a long way in imparting greater stability and continuity to aid levels and a more equitable burden-sharing among donors.

Perhaps it is also time to consider raising resources for aid by indirect rather than direct taxation—or at least by specific cesses on both direct and indirect taxes for specific purposes. It is at least possible, for example, that the world community might more readily accept an international cess on cigarettes if it were used by the World Health Organization to improve the standards of health and hygiene around the world. There is understandable concern that what the poor countries gain in aid is more than offset by deterioration in their trade; while waiting for a more liberal access to rich markets, can we not agree, for example, that a part of the protective duties levied by the rich against the products of the poor should be made over to some international agency for diversification of the trade and economies of the developing countries directly affected?

Acceptance of such ideas cannot be easy. But it is worth knocking at many doors, as there is no knowing which one would open. The basic advantage of such specific endeavors is that they can appeal to an ordinary man's sense of justice and fair play.

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Foreign Aid—a Proposal

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[A possible solution to some of the problems in donor-recipient aid relations would be to collect aid funds directly from taxpayers in donor countries by allowing them to substitute a contribution to one or more international Development Funds for a limited fraction of their income-tax payments.]

From Project to Program Aid

Current practice in foreign aid dates from the new principles introduced by the Kennedy Administration in the early sixties. The "project approach" had predominated through the fifties. The World Bank had been enjoined by its statutes to extend loans only on the basis of specific projects (in transportation, power, agriculture, etc.). The first activity of the United States in aid to underdeveloped countries was technical assistance, which had necessarily a project content and which evolved naturally into capital assistance with a similar content. Important departures from this practice, however, had occurred in countries on the periphery of the Soviet bloc where the United States extended massive military as well as economic assistance, with the latter being usually justified in terms of short-term import or budgetary requirements.

By 1960 criticism of the project approach was widespread. It was easy to show how development depended

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not on a few specific projects, but on an adequate overall investment effort, with respect to both aggregate size and composition, and how ill-designed fiscal, monetary, and foreign-exchange policies could undercut the positive contribution of any individual project to economic growth. A look at the total spending pattern of the recipient country is essential, it was argued, if one wishes to have some assurance that the aid funds are put to productive use. It was also pointed out that project aid necessarily implies a series of perverse incentives: it encourages the aid recipient to prepare large capital projects, to exaggerate the foreign-exchange portion of the total cost of these projects, and to favor public infrastructure projects which are most easily financed through loans or grants extended from one government to another for project purposes. Another important reason for going from project to program aid was the desire to increase the level of aid to some key countries and to provide a solid institutional basis for aid-giving at this higher level. Program aid was conceived as aid given "in bulk" on the bais of a general understanding between donor and recipient about the latter's development program and principal economic policies.

As a result of what was then thought to be the model case of India, the accent was at first primarily on achieving agreement on the recipient's development plan, its size, priorities, and the resulting "resources gap" to be filled by aid in its various forms. But, in most developing countries development plans are primarily statements of intention. Even in the rare country with a highly operational development plan, the fulfillment of the plan's objectives would depend crucially, among other things, on "appropriate" fiscal, monetary, and other economic policies. In Latin America, moreover, program aid under the Alliance for Progress was to be forthcoming not only in connection with a broad agreement on economic-development objectives, but was to be premised also on advances in social development that depended on the enactment and implementation of reforms in land tenure, income taxation, educational opportunity, and the like.

It is useful to draw a distinction between "pure" project and "pure" program aid, even though these two types of aid hardly ever appear in practice in their pure forms. First, the donor can insist that the money be spent for certain specific purposes: the result is pure project aid as here defined. Secondly, the donor may require that the recipient country change some of its ways and policies as a condition for receiving the funds: this is our definition of pure program aid.

From the point of view of the recipient, there is a fundamental difference between the two "bargains" which may accompany the transfer of aid funds. Pure project aid may force the recipient

country to substitute to some extent the donor's investment preferences for its own; nevertheless, the aid permits the country to achieve a position in which it is unequivocally better off than without aid, in the sense that more funds are forthcoming for some purposes. But the commitment a country undertakes in connection with pure program aid is typically of the following kind: to increase investment and decrease consumption, to increase the share of the private sector and decrease that of the public sector, to devalue the currency and thereby alter relative price relationships within the country, to throttle inflation and therefore strike a blow at the particular interest group whose turn it is to benefit from the next inflationary appropriation, credit expansion, or rise in prices or wages; and so on. In all these instances, compliance with the conditions attending program aid makes one group within the recipient country worse and another better off than before.

In practice project aid may also involve policy changes that would hurt some groups or individuals. When the project donor spends its funds on, say, a certain kind of power station, it will often have views, and will attempt to have them prevail, on such matters as accounting practices, power rates, administrative autonomy, and perhaps even public versus private ownership of the utility. Even in this case, however, an important difference between project and program aid remains. The policy changes the donor is liable to insist on in project aid are limited to the construction and operation of the project, whereas program aid is usually given in connection with changes in central economic policies of the recipient, around which the more important group conflicts rage. Program aid implies at least some shift in national objectives and in the short-term fortunes of different social groups, and the "bargain" will be considered a bad one by the circles that value highly the objective that has been sacrificed and by those groups whose interests have been hurt. Aid can and will be attacked by these groups as being damaging to the national interest as they define it.

There could be cases where the conditions attached to pure program aid create no problems for the governments of recipient countries, but this would only be found where the recommended policies are already approved and practiced, which is hardly typical. Under ideal conditions, a recipient government might conceivably be persuaded by the donor's logic, and in turn persuade its citizens. But the normal case is more prosaic: the knowledge that aid is available if certain policies are adopted serves to make these policies more attractive and less costly than they would otherwise be. These policies will often be adopted by aid-hungry governments in spite of continuing doubts of the policymakers themselves, resistance from some quarters within the government, and onslaught against the "deal" from the opposition. Soon after the aid agreement is signed

these reservations and resistances will find some expression—for example, through half-hearted implementation or sabotage of the agreed-to policies—and relations between donor and recipient will deteriorate. Whatever the eventual results in performance, they will have been obtained at a noticeable political cost.

We must remember, however, that the main virtue of program aid has been to permit a considerable increase in the volume of aid extended to a number of countries. Two questions therefore arise: first, is it possible to change the practice of program aid in such a way as to avoid some of its more unpleasant side-effects? Second, is it possible to go beyond both the limitations of project aid and the liabilities of program aid, and devise a wholly new approach?

An Alternative Mechanism for Foreign Aid

Aid-giving processes are sufficiently defective to warrant a search for new techniques—however Utopian they may appear at first sight. To our minds, the basic requirements of a satisfactory aid technique are: 1) it should permit the transfer of a substantial volume of funds to the poor countries, 2) it should not be tied systematically to the achievement of a meeting of minds on central economic-policy decisions of the recipient countries, and 3) it should still exert pressure toward the efficient use of the resources that are provided.

We shall now discuss a scheme that gives promise of satisfying these conditions and would have two important additional merits. First, it would place international development more on a people-to-people basis and thereby rekindle public interest in it. Secondly, it would institutionalize more openly and firmly than heretofore the redistribution of world income from the rich to the poor countries. Like any new scheme, the one described here is replete with uncertainties and difficulties. Fortunately it lends itself to being introduced gradually, and it could initially supplement rather than replace existing resource flows. Once perfected in one country as a result of experience, the proposed alternative mechanism for transferring aid might largely supersede current bilateral programs and might also spread to other donor countries.

The essence of the plan is to involve the individual taxpayer of the donor countries in the foreign-aid program. Instead of paying taxes for a package of government expenditures that includes foreign aid together with all domestic programs, taxpayers could elect to use a limited portion of their income-tax obligation for contributions to one or several World Development Funds. These Funds would not be administered by any government and would channel financial assistance to various investors, public and private, in developing countries.

For their "contribution to foreign aid" the taxpayers would receive a full tax credit from their government. In the last resort, the government would still be the donor to developing countries, in that its tax revenue would be reduced by the amounts that individual taxpayers were earmarking for foreign aid. But the resulting funds would not belong to the government, and their allocation and uses—and, to some extent, their amount—would no longer be determined by it.

The tax-credit mechanism, and a number of other points made here, were suggested by the remarkable effectiveness of a Brazilian scheme for regional development, whereby taxpayers in the more prosperous parts of the country are allowed to substitute a contribution to approved investments in the depressed northeast area for a part of their tax payments [see Development Digest, July 1969, pp. 97-104]. Our scheme would be an international application of the idea.

In more detail, the tax-credit mechanism might work somewhat as follows. Individual taxpayers in the U.S., for example, could claim a full tax credit for their foreign-aid contributions up to 5 percent of their federal income tax or $10,000, whichever is smaller. A hypothetical taxpayer with an adjusted gross income of $16,000 and a tax liability of $2,030 could, for example, obtain a tax credit of $102 under these scheme. The claim for credit would have to be substantiated by a receipt from the depository bank or other satisfactory documentation. The limits of 5 percent and $10,000, while arbitrary, are designed to eliminate the possibility of undue influence by wealthy individuals on the operations of the Development Funds proposed below and to hold the potential cost of the scheme to the Treasury to reasonable dimensions. Corporations would not be eligible for this credit for similar reasons, the danger of suspicion of "private imperialism" being particularly acute in their case. From U.S. data, it may be crudely estimated that the maximum amount that could have been made available for development in this way in 1965 was about $2.3 billion, compared with actual public economic assistance in the fiscal year 1966 of about $2.5 billion.

Return to the investor. Apart from the psychic satisfaction of helping the poor of the world become less poor, the benefits which an individual might get from taking part in this scheme should be narrowly limited. For every $100 (or other round figure) deposited, the taxpayer would receive a "Share in Development." To avoid complications, this document should not be a marketable asset. The possibility may be held out, however, for such shares to earn a small return, on the order of $2\frac{1}{2}$ percent a year for 40 years, until the face value of the "loan" is fully repaid. Whether or not this return is actually received would depend on the nature of the use made

of the funds on average. Any such return would presumably be taxable as normal income to the taxpayer. Another possibility might be to introduce a lottery feature with some such prize as a tourist trip to the less developed country of the winner's choice.

Uncertain and small as these incentives would be, they should serve to make the tax-credit option a preferred alternative to simply paying taxes. Their primary purpose is to maintain the interest and involvement of taxpayers in the progress of the less developed world without imposing serious service and transfer problems on the recipient countries.

How to channel the funds. One can envisage various ways in which the funds provided by the tax-credit mechanism might flow to less developed countries. At one extreme, all the tax-credit funds might be remitted by the depository banks to a single World Development Fund, which would then allocate them to different activities in different countries. Such a single Fund, however, would surely be tempted once again to influence policies of recipient countries and engage in the practices criticized above. At another extreme, every individual investor might search out some qualifying activity in some less developed country into which he would like to put his money. But it would clearly be impossible for most of those potentially affected by the tax credit to have the knowledge to behave in this way, nor would it necessarily be desirable in promoting world development. Some compromise is needed to avoid monolithic bureaucracy, on the one hand, and self-centered individualism, on the other.

One possibility is for the funds to be channeled in some proportions (which could be reconsidered at periodic intervals) to special sections of the existing multilateral organizations, such as the World Bank and its affiliates, the Inter-American Development Bank, and the other regional banks. This solution would have the advantage of avoiding the setting up of a new bureaucracy, but there is some question about channeling all available funds to these far from infallible international agencies.

Partly for this reason and partly to explore the possibilities of still more decentralized aid-giving, we shall discuss an alternative: to set up a number (say 10) of independent private organizations called Development Funds as agents for disbursing the funds collected through the tax credit. Each Fund would be managed by a small professional and administrative staff under a board of directors. Staff recruitment would be on an international basis. No one country should have a majority on any board; board members would serve in their private capacity and not as representatives of any country or organization. These stipulations are designed to emphasize the international and non-governmental character of the Funds

and to permit drawing as widely as possible on world competence in guiding their operations.

Some operating rules. The main restriction imposed on the investment policy of the Funds is that any project in which they invest should be partially financed by someone else. The required complementary investor (or investors) might be a local private entrepreneur, a local development bank, the government or a public enterprise, and perhaps also some other international lending agency, or any combination of these. This requirement is crucial to ensure efficient use of funds and to avoid that the recipient country consider the cost of capital to be zero. The percentage of the matching requirement might vary with the country: it might well be set at a lower level for the poorer countries.

It deserves emphasis that the Funds would be institutionally neutral. The degree of their involvement in a country's economic life should not be affected by the way in which that country chooses to draw the borderline between the public and private sectors. The only generally unacceptable partners would be private foreign enterprises and bilateral government lending agencies, although there could be exceptions even to this rule when it is clear that principal ownership and control rest in local hands. Should the Funds be restricted to the financing of a limited list of certain "productive" or "essential" activities? For a number of reasons, we do not think so. It is up to the recipient countries to determine whether they want to be permissive or restrictive in this respect. Every sovereign country will evidently be able to restrict the access of its nationals to the Development Funds in any way it sees fit, and the Funds should be left to use their best judgment, within those limits, without further direction.

As most developing countries are at present either too debt-ridden or too poor to shoulder large additional amounts of international indebtedness, the net return flow stemming from the Funds' investments should be strictly limited. Some small inflow of foreign exchange from successful projects would be desirable to cover the administrative expenses of the Funds, and to enable them to pay out a small return of capital to the original individual "investors." Any such repayment to investors would depend on the average return to the Funds, since one taxpayer's money would not be distinguishable from another's. The backflow of dollars from past investments should not normally exceed that needed for these purposes, but if it did so occasionally it would provide a useful reserve and supplement to the ordinary resources of the Funds.

The purpose of creating ten or twelve Funds instead of one is to encourage diversity and competition. It would therefore be best not

to assign certain countries or groups of countries or certain types of investments to one Fund rather than another. In time, of course, one might expect the different Funds to acquire their particular areas of competence both regionally and functionally. A few general rules in this regard might be useful to avoid undue concentration. For example, it might be specified that no Fund could have more than 50 percent of its total investment in any country or type of activity, while more than one Fund could invest in the same country or the same activity. Initially the monies collected under the tax-credit scheme could be divided equally among the various Development Funds, but one could gradually relax this automatic distribution as the Funds began operating and building a distinctive record and personality on the basis of which each would appeal to the taxpayers. If the taxpayers had to decide which Fund or Funds to favor, the competition would spur the Funds' efficiency and drive, and also serve to enhance and keep up the taxpayers' interest in the development process.

It may be hoped that, as a result of competition among the less developed countries, each will secure a fair share of the total funds available. Some form of guidance might be needed to prevent total neglect of some countries, but this should not be elaborate or inflexible. Whatever the ensuing distribution of aid funds, it is unlikely to be any more irrational from the point of view of world economic development than it has been in actual practice over the past twenty years.

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Development Assistance Strategies in Latin America

Jack Heller

[Experience with assistance programs in Latin America in the 1960s suggests that in the future the U.S. needs to place more reliance on Latin American initiatives and decisions. A major problem for the development strategist will be how to modify the present mix of bilateral and multilateral assistance programs.]

We are at a turning point in U.S. assistance strategies and policies fully as profound as the major shifts in policy which occurred in the late 1950s and early 1960s. Lessons of the past decade's experience point to the great need for precision in identifying what it is possible to do. Into this category I would also place the lesson of humility. The complexity of the development task requires considerable intellectual humility on the part of anyone who wants constructively to intervene in, and attempt to shape it. One of these lessons is illustrated in the concept held by many of the architects of the Alliance for Progress in its early years about how it would operate.

At the outset of the Alliance, many people in the U.S. and in Latin America urged, and passionately believed in, the somewhat mechanistic strategy according to which assistance flows could be neatly brought together with development priorities and financing gaps as measured in country development plans. Each Alliance country would produce a plan, which in turn was to be reviewed for adequacy and consistency by a multinational panel of experts, which

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in turn would recommend financing levels to the U. S. Government and other international lenders. This mechanistic strategy ignored the fact that few countries had more than a limited capability to prepare such plans, and that the identification of priorities and financing gaps in a plan is, even with the best facilities, an imprecise and chancy art. Equally important, these are only the first and tentative steps on a longer road to the preparation of viable and fundable projects suitable for domestic or external financing. Few Latin countries had a strong capability for identifying projects suitable for international financing and for presenting their proposals to the international lenders in a sufficiently well prepared fashion for the lenders to respond. There has been considerable improvement, but even today the supply of available external assistance tends to outstrip effective demand for these resources in the form of fundable projects.

Among the lessons I see emerging from these conceptual misfires are that development strategies which are not grounded in the hard realities of the political and institutional conditions of less developed countries—conditions which are the very hallmark of underdevelopment—are not strategies at all, but designs for failure. Moreover, there is the lesson that development priorities, programs, and projects which are not hammered out on the budgetary and political anvil of the client country are not likely to be actually carried out. Thus, while many countries eventually produced elegant development plans, replete with priorities and program details, these plans were largely the products of bright young technical staffs, responding less to domestic political and administrative realities than to the stated requirements of foreign assistance lenders. As such, their imprint on country policies and programs was not very great.

A corollary to this, probably central to the lesson of humility, is that external assistance plays at best a marginal, although at times crucially catalytic or complementary, role in development. What counts most, of course, is the domestic political consensus or will to act, and the domestic ability to do so in a meaningful way over a sustained period. There was, however, a positive side of this early strategy approach. In many countries, the early years' abortive planning efforts brought sharply into focus the inability of their governments to act in a coherent fashion in respect to their development problems, and this realization served as a critical stimulus to subsequent efforts to develop the skills and organizational competence which were needed. As a result there are many countries today in which there has developed, or in which there clearly will soon develop, a stronger governmental capacity for policy management in key development sectors—a capacity which by any standards is quite impressive and which, in contrast to the situation in the 1950s, is remarkable. Insofar as this strengthened capability has been increasingly tied to

the institutional levers of resource allocation and policy implementation, it has great value as a developmental asset.

I would like here to turn to yet another group of related lessons. Almost inevitably built into a development assistance relationship and strategy are frictions between assistance donors and recipients. In my view, and contrary to much of the current mythology of development assistance, these frictions do not arise from the vague psychological tensions of a dependency donor-donee relationship. They are of course compounded by growing nationalisms and by the terrible frustrations in many countries of lagging progress. But they grow, I believe, largely from very important substantive differences between borrower and lender on such issues as priority setting, what performance conditions it is reasonable to attach to a lending program, the appropriate mix for any project between domestically furnished and externally furnished resources, and so on.

In many cases, these conflicts are more apparent than real in that responsible technicians and political figures in the recipient country will often rely heavily on the international lenders to press for, and to take the political heat on, difficult or unpopular decisions associated with reform policies such as tax reforms. In such cases the development-minded technicians and politicians can often export the political blame for unpopular policies to the international donors. This phenomenon can be constructive within limits, and the role is one which external assistance donors should willingly play. But I doubt whether the U. S. Government should seek to play this role for much longer in the future.

In addition to the "scapegoat" cases, there are also many instances in which country priorities, and project and program proposals emerge through national political and institutional processes, with which international lenders—including the U. S. Government—simply cannot agree; and conversely, of course, numerous instances of performance conditions set by donors which prospective borrowers cannot accede to. There is now a growing feeling in many countries that questions of national priorities and performance are for them to determine exclusively for themselves, and that the role of the donors must be limited to essentially that of bankers. Any other role, they argue, infringes upon their sovereignty and is unacceptable as a form of intervention. On the part of the donors, at the same time, there is often skeptical distrust of the priorities, program capabilities, policy intentions or validity of the project proposals which are submitted for their consideration.

I believe that development assistance strategists must assume that these conflicting viewpoints will intensify in assistance relationships over the coming years—particularly as the frustrations and

impatience of inadequate progress become more intense. Our success in evolving ways of mediating these conflicts will profoundly shape the size, direction and helpfulness of external assistance to the hemisphere.

As a first and tentative step towards developing mechanisms for mediating these built-in conflicts, the United States has begun to try to change the style and methods of its bilateral assistance program. Henceforth, the United States will rely far more heavily on Latin American initiatives in defining the problems and devising appropriate policies and projects than in the past. Consistent with this strategy, the U. S. will stress with its Latin American partners that the development relationship is two-sided. Recipient countries clearly must set, live with, and act upon their own priorities, without the feeling that there are overbearing influences intruding in this process from without. At the same time international donors, including the United States Government, must reserve their privilege to refrain from supporting programs and policies which do not appear, by international standards, to merit support.

The key question is: who is to define these standards? In this regard we have proposed a significant strengthening of existing multilateral machinery in order that it may serve this vital function in Latin America. Among other things, we have asked our Latin American partners for their views about how we might best proceed to further place our bilateral programs within a multilateral framework. In short, our strategy assumes that the best route to defusing or dulling these built-in conflicts, particularly insofar as these threaten to intensify and crystallize around nationalistic themes, is to multilateralize as far as possible the performance standard setting and the allocational decisions.

There are, of course, practical difficulties in this strategy, and its outcome is by no means clear. If it is to be effective, a multilateral mediator must be credible to donors when insisting upon acceptable standards of performance, while at the same time engaging the respect and confidence of the recipient countries. The practical question for the future is how to devise enduring mechanisms with these characteristics. This issue will severely test the persistence and imagination of assistance strategists for some time to come.

What about the question of increased multilateralization of resource flows? Is this desirable or not? Of the total AID, International Bank for Reconstruction and Development (IBRD) and Inter-American Development Bank (IDB) aid commitments to Latin America of approximately $1.2 billion in fiscal year (FY) 1969, the AID share was only about 30 percent. In FY 1963 the AID share

was some 55 percent of a total of $985 million. I will address only two of the many issues which I feel are central.

The argument for increased multilateralization in narrow terms of U. S. interest is that, while permitting the donor to pursue its interest in accelerated development, this approach serves to protect it from the political costs of the tensions and abrasions of the direct donor-recipient relationship. With the disorderly political setting which may be in front of much of the Hemisphere in the next decade, a move to greater multilateralization of resource flows would help to "depoliticize" the aid relationship and insulate it from shifting legislative and public attitudes and pressures.

Arguments against further multilateralization are briefly as follows: First, many in Latin America—particularly in those countries which have benefited most from bilateral programs—have indicated a strong preference for continued bilateral assistance. Some feel that the U. S. will be less rigorous in its performance requirements than a politically independent, multilateral body might be. Second, some argue that the issue of tensions and abrasions is exaggerated, and that U. S. bilateral assistance programs by and large represent a large asset in our country-relationship ledger. They suggest that the generation of tensions is not really linked to the assistance delivery systems, whether bilateral or not, but instead is related to who does the programming—that is, who decides and how they decide to allocate resources. They argue that increased multilateralization of flows simply does not merit the risks and disadvantages which it carries, and that solutions addressed to the programming side are less risky and more relevant. Third, it is argued that further reducing the bilateral share, while increasing the U. S. contributions to multilateral entities, could destroy the multilateral character of these entities by the sheer weight of disproportionately large U. S. contributions. Thus, it would have the reverse effect of that anticipated by "politicizing" these institutions. They also point out that, while our Congress has so far refrained from imposing restrictive conditions on U. S. contributions to multilateral bodies, there is a high probability that this restraint would disappear if our assistance became much more heavily concentrated in these international entities. This would mean that our appropriations to these entities would be freighted with many legislatively imposed procedural and administrative barnacles of the sort which now encumber our bilateral programs.

Finally, there is the related argument that the U. S. simply cannot afford to lodge full responsibility for the implementation of this most important facet of hemispheric foreign policy in institutions over which it does not wield effective control. Proponents of this argument point out that if we did control them through legislative

restrictions on our contributions, these entities would cease to be multilateral in any meaningful sense. If we didn't control them, on the other hand, we would lose control of our foreign policy.

There is also the problem of the size and content of resource flows. Most analysts agree that a rapid move in the direction of multilateralization would, for the foreseeable future, lead to a diminution in total resource flows. Equally important, there would be very significant programming sacrifices. These would follow because of the specialization of function which has grown up as between AID on the one hand and the IBRD and IDB on the other. AID lending—as innovative financier of last resort—is heavily concentrated in non-project lending and, unlike the banks, is rooted heavily in comprehensive country programming. Unlike AID, the banks do not in fact maintain the field staffs necessary for comprehensive programming and broad scale technical assistance and loan monitoring. Their energies are focused heavily upon infrastructure lending; their portfolios and AID's are not readily interchangeable. If the U. S. bilateral assistance program were to be scaled down rapidly, it would be many years before the banks could adequately re-orient their programs to fill the gap this would create. Further, since a major bar to increased bank lending has been and continues to be the lack of fundable projects, the shift to these institutions of resources formerly supplied by AID could result in a sterilization, or at least a slow-down, rather than a timely use of these funds.

The dilemmas for the development strategist inclined to modify the present bilateral-multilateral mix are indeed quite real. My guess is that one of the most significant practical strategy questions for the near future is whether the time has come to begin gradually equipping the international institutions with a comprehensive programming capability in the field, with a view to gradually displacing the bilateral U. S. presence. This of course is a very complicated question and would require major changes in the way the international agencies operate, view their roles, and relate to one another.

Finally, there is a set of issues relating to some of the basic attitudes towards development which must be clarified if we are to act coherently in the decade ahead. The requirement for continued large scale economic assistance to Latin America for the next decade seems obvious. Projections of the number of people entering the labor force over the next decade reveal the need for massive capital investment if already high unemployment is not to increase to even more intolerable levels. Projections for school enrollments, requirements for housing, health facilities, transport and marketing facilities to make food available in urban areas—all imply needed growth rates well above present levels in many countries. In turn, this implies import requirements which can only be financed by

continued large scale foreign inputs and greatly increased efficiencies in the domestic management of limited resources. Projections of these requirements are so sobering, that I believe a definitive case must be made for depoliticizing assistance attitudes and policies far beyond what has been acceptable in the past.

This becomes particularly important insofar as the rapidly accelerating pace of political and social change in Latin America will surely be accompanied by some, and perhaps considerable, political disorder. The role of the military in civilian affairs may well be large. In their search for political solutions, many countries will turn to non-representative or authoritarian governments: some will be populist and reformist, some will have repressive characteristics; and some of them will be developmentally effective. If we are to sustain effective development strategies, we cannot simply turn our assistance on and off with each change in the political complexion of the Latin American governments. While this may not be a popular view, it may be the one which development strategists will be forced to defend if they are to have any strategy to speak of. In any case the strategist will be required to sort these political issues out with greater precision than before, and he will be subject to strong feelings and political tugs from all sides.

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